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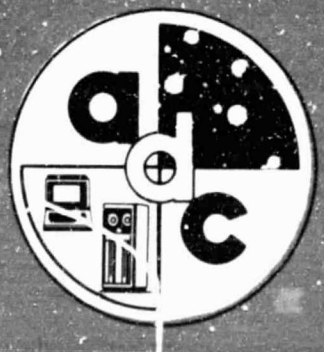

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ASTRONOMICAL DATA CENTER BULLETIN

Volume 1 Number 3

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ASTRONOMICAL DATA CENTER BULLETIN

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EDITORIAL

This is the third issue of a publication designed to provide a vehicle for the dissemination of information about work in progress on astronomical catalogs. In addition to progress reports on specific tasks, we are including in each issue an updated status list for astronomical catalogs available at the Astronomical Data Center (ADC) at NASA Goddard Space Flight Center. Contributed papers from observatories and individuals involved with astronomical data are welcome. We wish to encourage communications describing ongoing projects, new catalogs completed or planned, and lists of errors determined for existing catalogs. In this way, we hope to avoid redundant efforts and to increase the efficiency with which astronomical data are being compiled and distributed.

In order to maintain a reasonably uniform format and decrease editing time, we ask that authors submit camera-ready copy for articles to be published in this bulletin. Papers should be single spaced and typed in an area approximately 6.5 inches (165 mm) horizontally by 8.375 inches (213 mm) vertically. The margins should be 1.375 inches (35 mm) at the top, 1 inch (25 mm) at the left and right sides and 1.25 inches (32 mm) on the bottom of each page. Standard 8.5- x 11-inch (216- x 280-mm) paper and a serif type style (Prestige Elite, Courier, Adjutant, etc.) should be used if possible. Two copies of each manuscript should be submitted to:

Dr. Wayne H. Warren Jr.
Astronomical Data Center
National Space Science Data Center
Code 601
NASA Goddard Space Flight Center
Greenbelt, Maryland 20771

Issues of the *Astronomical Data Center Bulletin* will be published as sufficient new material becomes available to comprise each issue. Each volume will be continued until enough material has accumulated for library binding. Comments, criticisms and suggestions from the astronomical community will be enthusiastically welcomed.

The Editors

J. M. Mead
W. H. Warren Jr.
T. A. Nagy

ADC Bull. (July 1983) 1, 172-173

CATALOG OF GALACTIC O-TYPE STARS

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There are many current research problems which require an accurate knowledge of the initial mass function for massive stars, and in a recent paper ("The Initial Mass Function for Massive Stars," Garmany, Conti, and Chiosi 1982) we have redetermined this function using a volume-limited sample of stars. We have based this determination on a machine-readable catalog of Galactic O-type stars containing 764 objects. Our catalog is probably complete to a distance of about 2.5 kpc.

From the literature we have compiled a catalog of all O-type stars for which we have spectral types, luminosity classes, and *UBV* photometry. The majority of the stars comes from either Cruz-Gonzalez *et al.* (1974) or Humphreys (1978). Additional stars have been added from Garrison and Kormendy (1976), Garrison, Hiltner and Schild (1977), Feinstein, Marraco and Forte (1976), and Moffat, FitzGerald and Jackson (1979). Additional sources of cluster membership include Conti and Alschuler (1971) and Moffat and Vogt (1975). Improved spectral types have been taken from Garrison *et al.* (1977). Sources for improved photometry include Feinstein *et al.* (1976), Guetter (1974), and Klare and Neckel (1977). This catalog, which is coded in machine-readable form, is available through the Astronomical Data Center at Goddard Space Flight Center.

The observational data for each star in the catalog include: HD, BD or other designation, cluster membership, V, $(B-V)$, *spectral type*, l, b. For each star we have derived the distance, effective temperature and bolometric magnitude. If the star is a cluster or association member, we have used the distance given in the primary reference source. If the primary reference included the absolute magnitude also, we have that value. Stars that are apparently not cluster members are referred to as field stars, and their absolute magnitudes are taken from Conti's (1975) calibration of spectral type and M_V. The distance is then computed from the star's distance modulus and colors, with the interstellar extinction, A_V, derived assuming $A_V = 3 \times E_{B-V}$. We have used Conti's temperature scale (1975) and Morton's (1969) bolometric corrections as a function of temperature.

There are 781 stars in our catalog; of these 50 do not have *UBV* colors and 140 have only MK spectral types with no luminosity classes. Further spectral classification of these 140 stars is under way, following the system of Garrison *et al.* (1977). Preliminary classification is complete for 25 of them from spectra taken at KPNO at either 63 Å mm^{-1} or 79 Å mm^{-1}. These new spectral types are indicated by an asterisk in the catalog.

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ADC Bull. (July 1983) 1, 174-182

THE MACHINE-READABLE VERSION OF *THE BRIGHT STAR CATALOGUE*, 4th REVISED EDITION

Dorrit Hoffleit
Yale University Observatory

and

Wayne H. Warren Jr.
National Space Science Data Center
NASA/Goddard Space Flight Center

The 4th edition of the Yale *Bright Star Catalogue*, prepared by D. Hoffleit with collaboration by C. Jaschek, was published in June 1982. The tapes originally prepared at Yale were written with the PDP-11 and DEC-20 computers, where the coding used was not always standard. These tapes were turned over to the second author at the Astronomical Data Center (ADC) where he has translated them into a more universally readable form.

The printed catalogue lists the BS = HR number, Bayer and Flamsteed designations, DM and HD numbers, double- and variable-star designations, and a column headed "I" indicating that the star is an infrared source. Positions for 1900 and 2000 are given to $0^s.1$ in RA and 1" in Dec. These coordinates were computed from the SAO positions for 1950 by applying both precession and proper motion. Galactic coordinates are given to 0°01 in both coordinates. The right hand pages give *V*, *B-V*, *U-B*, and *R-I* data when available. Magnitudes not on the *UBV* system are identified by the suffix H (Harvard Revised Photometry, *Harvard Annals* 50, 1908) or R (Harvard magnitudes reduced to the *UBV* system by Rybka 1977). A few magnitudes given to only one decimal are less precise values for either variable or double stars. The spectral classes are on the MK system for 93% of the stars; for the others only HD types and/or Mount Wilson luminosity classes (g or d) were available. The proper motions, with a few exceptions, are from the SAO catalogue. Trigonometric parallaxes, provided by W. van Altena, are still provisional, awaiting the completion of his revision of the *General Catalogue of Trigonometric Stellar Parallaxes*. A prefix D in the printed version indicates an available dynamical parallax for stars lacking a trigonometric value. In the tape version the D follows the parallax value. Radial velocities, given to the nearest km s^{-1}, come from many sources. Preference was given to the reduced mean values determined by Evans (1967); other values come from Wilson (1953), Abt and Biggs (1972), Barbier and Petit (values available up to 1975), and more recent values supplied by various observers. The RV column adds V for variable, V? for suspected variable radial velocities, SB for spectroscopic binaries, SB1 and SB2 for single or double lined spectra, and SBO, SB1O or SB2O for the spectroscopic binaries with determined orbits. Rotational velocities, $v \sin i$, to the nearest km s^{-1}, come mainly from Uesugi (1976) with numerous values from recent sources. The next four columns, Δm, SEP, COMP and N refer to visual binaries or multiple stars; Δm and SEP give the magnitude difference and separation of the two brightest components of a system, while COMP

identifies which two components are presented (not necessarily A and B). An O indicates that the secondary was discovered by occultation techniques. Under the heading N is given the number of recognized components of a multiple system. The final column contains an asterisk for each star for which a REMARK is given.

The tape version of the Catalogue basically follows the printed version except for the necessity of special alignment of characters to avoid having numerical, lower case and upper case letters in certain data fields simultaneously. Whereas Yale had provided the catalogue on 18 separate tape files, including files for the left and right pages in blocks of a thousand stars, the ADC version combines these to a single data file while reformatting to remove redundant HR numbers.

The tape version also includes a file for all of the Remarks that follow the catalogue proper. Here the coding used on the DEC-20 for super- or sub-scripts and for Greek letters has been adopted, for example:

V_0 = V@-0

$\sin^3 i$ = sin@+[3]i

α = alpha = @Greek (a)

The final page of the printed catalogue, "Supplementary Remarks and Corrections" contains information received too late to have been incorporated into the catalogue proper and errors discovered too late to be rectified. On the tape version all of the additions and corrections have been incorporated in their proper sequence in the Catalogue or Remarks.

The following additional errors have been found in the printed version only:

HR	
561	Under D the number 5953 should be under VAR
5527	HD: for 13070 read 130701
7442	Sp: for s read S
7469	Under D, for ADS 2695 read 12695
8463	Under D, for ADS 5708 read 15708

All of these stem from alignment mishaps incurred in the process of conversion from PDP output (where they were correct) to the DEC-20 version required for the final printout. All of these are correct in the ADC tape version.

The printed catalogue has three appendices not reproduced on the tape version. Appendix I identifies Bayer and Flamsteed stars, while Appendix II is an extensive list of star names culled mainly from old literature.

Appendix III is a list of some 200 stars brighter than 6.50*V* by modern *UBV* standards, that are not included in the Catalogue as such because they have no HR numbers. With but three exceptions (HD 93738, 6.4v; 96088, 6.2v, and 100826, 6.2v) they were all recorded fainter than 6.50 on the Harvard visual system, as given in the *Henry Draper Catalogue* (1918-1924). None occurred in the earlier Harvard photometric catalogues. These stars and others brighter than 7.10*V* by modern determinations are the basis for a Supplement to *The Bright Star Catalogue* now in preparation.

The following pages contain sample listings of data records as they are recorded on the magnetic tape version. Groups of records from the beginning and end of each file are shown. The beginning of each record and bytes within the record are indicated by the column heading index across the top of each page (digits read vertically). Since files 1 and 3 contain more than 115 bytes per record, the remaining bytes (116-212 in file 1, 116-132 in file 3) are printed in a second row.

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L I S T I N G O F R E C O R D S F R O M T A P E F I L E

TAPE FILE NAME: BRIGHT STAR CAT. 4TH ED.
RECORDS 1 TO 15
TAPE FILE 6
RECORD LENGTH 212 BYTES
INPUT VOLSER ADC005

```
COLUMN
HEADING
INDEX    1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345
RECORD      1     1            +44 4550      3       46              0  0  1.1 +44 40 22  0  5  9.8 +45 13 45 114.84 -16.66  6.70
                                  A:Vn                  -0.014 -0.013       - 18       195    4.2   21.6 AC   3
RECORD      2     2            - 1 4525      6                      23 59 56.2 - 1  3 30  0  5  3.7 - 0 30 12  98.33 -61.14  6.29
                +1.10 +1.02        gG9                  +0.042 -0.055       + 14
RECORD      3     3 33    PSC - 6 6357     28 I D          VAR?      0  0 13.0 - 6 16  1  0  5 20.1 - 5 42 27  93.75 -65.93  4.61
                +1.04 +0.89 +0.54   K1III                -0.012 +0.094 +.014 -  6SB10 < 17    2.5    0.0  0   3   *
RECORD      4     3 86    PEG +12 5063     87                      0  0 33.8 +12 50 23  0  5 41.9 +13 23 47 106.19 -47.98  5.51
                +0.90              G5III                +0.045 +0.005       -  2
RECORD      5     5            +57 2865    123       61            0  1  1.8 +57 52 45  0  6 15.9 +58 26 12 117.03 - 3.92  5.56
                +0.67 +0.20        G5V                  +0.262 +0.036 +.047 - 12             0.8    1.4          *
RECORD      6     6            -8918337    142   M                0  1  8.4 -89 37 51  0  6 19.0 -89  4 31 321.61 -66.38  5.70
                +0.52 +0.05        G1IV                 +0.565 -0.032 +.056 +  3SB           5.7    5.8          *
RECORD      7     7 10    CAS +63 2107    144                      0  1 14.4 +63 38 22  0  6 26.5 +64 11 47 118.06   1.75  5.55
                -0.03 -0.19        B9IIIe               +0.009 +0.005       -  0V      153                       *
RECORD      8     8            +28 4704    166       69    VAR?      0  1 25.2 +28 28 11  0  6 36.7 +29  1 17 111.26 -32.63  6.13
                +0.75 +0.33        K0V                  +0.380 -0.177 +.067 -  8             2.6  158.6 AB   4
RECORD      9     9            -23  4      203                      0  1 43.0 -23 39 47  0  6 50.0 -23  6 27  52.21 -79.14  6.18
                +0.38 +0.05        A7V                  +0.099 -0.038       +  3V
RECORD     10    10            -18 6428    256                      0  2 11.8 -17 56 39  0  7 18.1 -17 23 11  74.36 -75.90  6.19
                +0.14 +0.10        A6Vn                 -0.021 +0.040                195                       *
RECORD     11    11            - 3  2      315                      0  2 36.7 - 3  6 20  0  7 44.0 - 2 32 55  98.02 -63.29  6.43
                -0.14 -0.47        B8IIIpSi             +0.028 +0.003       + 13                              *
RECORD     12    12            -23  13     319       89  102308      0  2 40.3 -23  3 52  0  7 46.7 -22 30 32  95.56 -79.07  5.94
                +0.14 +0.06        A3V                  +0.051 -0.040       - 13V                5.1    1.9          *
RECORD     13    13            -34  17     344                      0  2 58.6 -34  5 10  0  8  3.4 -33 31 46 335.91 -78.67  5.66
                +1.12              K1III                -0.039 +0.005       +  7
RECORD     14    14            - 3  3      352 I D                  0  3  4.8 - 3  0 15  0  8 12.0 - 2 26 52  98.34 -63.24  6.07
                +1.38 +1.14        K2III                +0.006 -0.004       +  1SB0              2.0    0.0          *
RECORD     15    15 2101  AND +28  4      358 I     94   01 AND     0  3 13.0 +28 32 18  0  8 23.2 +29  5 26 111.73 -32.84  2.00
                -0.11 -0.46 -0.10  B8IVpHnMg               +0.137 -0.158 +.032 - 12SB0    56    8.5   81.5          *
```

L I S T I N G O F R E C O R D S F R O M T A P E F I L E

TAPE FILE NAME: BRIGHT STAR CAT. 4TH ED.
RECORDS 9096 TO 9110
TAPE FILE 6
RECORD LENGTH 212 BYTES
INPUT WOLSER ADC005

COLUMN NUMBERS
1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0

L I S T I N G O F R E C O R D S F R O M T A P E F I L E

TAPE FILE NAME: YBS4 REMARKS CONTENTS
RECORDS 1 TO 28
TAPE FILE 7
RECORD LENGTH 80 BYTES
INPUT VOLSER ADC005

COLUMN
HEADING
INDEX

```
         1         2         3         4         5         6         7         8         9         0         1         2         3         4         5         6         7         8         9         0         1         2         3         4         5
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345
```

RECORD 1 The fields in the REMARKS and SUPPLEMENTARY REMARKS:
RECORD 2 column 1: A blank.
RECORD 3 columns 2-5: A 1-4 digit HR number of the star (right justified) OR 4 blanks.
RECORD 4 columns 667: 2 blanks.
RECORD 5 columns 8-11: A 1-3 letter category followed by a colon (left justified) OR 4
RECORD 6 blanks.
RECORD 7 column 12: A blank.
RECORD 8 columns 13-132: The remark for this star & category.
RECORD 9
RECORD 10 Cases:
RECORD 11 1) Non-blank Star field: The start of a remark for a new star.
RECORD 12 2) Blank Star field and non-blank Category field: The start of a remark for the
RECORD 13 previous star in a new category.
RECORD 14 3) Blank Star & Category fields: A continuation of the remark for the previous
RECORD 15 star and category.
RECORD 16
RECORD 17 Codes for non-ASCII characters.
RECORD 18 The at-sign (∂) is an escape symbol signifying that something that can not be
RECORD 19 represented as ASCII is following. The general format is:
RECORD 20 ∂command{argument}
RECORD 21 The following are found in the remarks:
RECORD 22 ∂+[stuff] Means that stuff is to be superscripted.
RECORD 23 ie: a∂+{1} means a-superscript-1.
RECORD 24 ∂-[stuff] Means that stuff is to be subscripted.
RECORD 25 ie: a∂-{1} means a-subscript-1
RECORD 26 ∂Greek{letter} Means that the letter is a greek letter.
RECORD 27 ie: ∂Greek{a} is an alpha.
RECORD 28 See the following table for ASCII-greek correspondence.

L I S T I N G O F R E C O R D S F R O M T A P E F I L E

TAPE FILE NAME: YBS4 REMARKS CONTENTS
RECORDS 29 TO 56
TAPE FILE 7
RECORD LENGTH 80 BYTES
INPUT VOLSER ADC005

COLUMN HEADING INDEX

```
         1111111111122222222223333333333444444444455555555556666666667777777778888888889999999990000000001111111
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345
```

RECORD	29		
RECORD	30	Greek	ASCII
RECORD	31	letter	equivalent
RECORD	32		
RECORD	33	Alpha	a
RECORD	34	Beta	b
RECORD	35	Gamma	g
RECORD	36	Delta	d
RECORD	37	Epsilon	e
RECORD	38	Zeta	z
RECORD	39	Eta	h
RECORD	40	Theta	q
RECORD	41	Iota	i
RECORD	42	Kappa	k
RECORD	43	Lambda	l
RECORD	44	Mu	m
RECORD	45	Nu	n
RECORD	46	Xi	j
RECORD	47	Omicron	o
RECORD	48	Pi	p
RECORD	49	Rho	r
RECORD	50	Sigma	s
RECORD	51	Tau	t
RECORD	52	Upsilon	u
RECORD	53	Phi	f
RECORD	54	Chi	x
RECORD	55	Psi	y
RECORD	56	Omega	w

L I S T I N G O F R E C O R D S F R O M T A P E F I L E

TAPE FILE NAME: YBS4 REMARKS
RECORDS 1 TO 15
TAPE FILE 8
RECORD LENGTH 132 BYTES
INPUT VOLSER ADC005

COLUMN HEADING INDEX:
1111111111122222222223333333333444444444455555555556666666667777777777888888888999999999900000000011111111
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345

RECORD 1 3 VAR: Amp. 0.05V.

RECORD 2 SB: 72.93d, K 16.4k/s, Və-[0] -6.6k/s, asini 15.8.

RECORD 3 D: Occultation triple 5.0, 7.5v, 0.00003", third component 7.5v at 0.002".

RECORD 4 5 D: 6.43 dG4, 7.19 dG8, 106.83y, a = 1.432". Component B has possible invisible companion, period 6.9j.

RECORD 5 DYN: ".05i.

RECORD 6 6 D: CPM.

RECORD 7 G: 61 Cyg group.

RECORD 8 7 S: Also classified B8IV-Ve.

RECORD 9 10 S: Shell star.

RECORD 10 11 N: 4 Cet in Psc.

RECORD 11 12 VAR: ADS 89B, 11 - [14v.

RECORD 12 D: CPM.

RECORD 13 14 N: 5 Cet in Psc.

RECORD 14 SB: 96.41d, K 23.8k/s, Və-[0] +1.1k/s, asini 31.3.

RECORD 15 D: Blue companion? Sep. 0.002".

L I S T I N G O F R E C O R D S F R O M T A P E F I L E

TAPE FILE NAME: YBS4 REMARKS
RECORDS 7945 TO 7959
TAPE FILE 8
RECORD LENGTH 132 BYTES
INPUT VOLSER ADC005

```
COLUMN      1111111111222222222233333333334444444444555555555566666666677777777788888888899999999900000000011111111
HEADING     12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234
INDEX
```

RECORD 7945 DYN: ".081.

RECORD 7946 G: Sco-Cen assoc.

RECORD 7947 9089 S: Ultraviolet FeII emission.

RECORD 7948 VAR: Lb? 4.35 - 4.41V.

RECORD 7949 9090 C: Colors correspond to about minimum light.

RECORD 7950 VAR: B 7.1 - 14.8v, 351.33d.

RECORD 7951 9091 G: Member of high latitude, young metal-deficient cluster, αGreek(z) Scl; Sco-Cen assoc.

RECORD 7952 9094 D: ADS 18, 7.47V, +0.08(B-V), +0.05(U-B), A2Vn, vsini 275k/s, may be shell star. AB binary. C, 10.0m at 9
9" optical.

RECORD 7953 9097 VAR: I? Amp. 0.18.

RECORD 7954 G: Cas OB5.

RECORD 7955 9105 S: Primary discordant classifications, B9III or A3Vs.

RECORD 7956 SB: ADS 30B, 9.5 P5.

RECORD 7957 D: Binary.

RECORD 7958 9108 G: Sco-Cen assoc.

RECORD 7959 9110 VAR: Amp. 0.02:V, 6.4322d.

ADC Bull. (July 1983) 1, 183-187

THE TWO-MICRON SKY SURVEY: NEAREST SAO STAR AND LOCATIONS ON PALOMAR SKY SURVEY PRINTS

T.A. Nagy*, R.S. Hill* and J.M. Mead+

In order to plan a program for obtaining more precise positions of objects in the Two-Micron Sky Survey (IRC) of Neugebauer and Leighton (1969), we have prepared a list of potential guide stars by identifying the star in the Smithsonian Astrophysical Observatory Star Catalog (SAO, Haramundanis 1966) which is nearest to each IRC Source. In addition, we have listed each of the plate/print number(s) of the National Geographic Palomar Observatory Sky Survey (POSS) on which the IRC source appears, the great circle arc distance between the SAO star and the IRC source, the position angle of the IRC source relative to the SAO star, and the approximate rectangular coordinates of the IRC source on the POSS print area.

The POSS consists of 935 fields on 937 (blue-O and red-E) plates; there are two polar and two nearly identical fields, POSS #895 and 1619 where the former area is rarely used (King and Setteducati 1967). Of these 937 plate areas, there are 56 fields (central declination approximately -30 degrees) known as the Palomar southern extension (designated by an Arabic numeral preceded by the letter "S"). In addition, the Whiteoak southern extension consists of 100 plate areas (only red) with identifiers in the range 7000-9999.

Information in this two-micron data set was computed and collected from two data sources: (1) The MATCH (Hill and Nagy 1981) output of the Two-Micron Sky Survey and SAO catalogues and (2) The Palomar plate sorted (Nagy and Schmitz 1978) version of the IRC. These data are prepared in a format useful to an observer interested in the objects contained in the IRC. If an object appears on more than one POSS print area, a multiple listing is given for each print area on which the given object appears. The columnar information for each IRC object is described below.

Column	Description
IRC #	The identification number from the Two-Micron Sky Survey catalogue. The order in this table matches the published catalogue.
SAO #	The identification of the closest (great circle arc distance) SAO star to the IRC source. This datum is from the MATCH output data file.

D — Great circle arc distance between the SAO and IRC positions given in arc seconds. The published positions from the individual source catalogues are the data inputs to the MATCH program. Proper motion effects are not incorporated into the MATCH program.

PA — Position angle of the IRC source relative to the SAO source in degrees. The angle is measured from north through east according to the standard convention. This quantity was computed from the published (epoch 1950.0) source positions.

POSS — The POSS plate identification for the plate area on which the IRC object appears. The plate identifications include the Palomar and Whiteoak southern extensions as described above.

X, Y — The approximate rectangular coordinates of the IRC object on the POSS print area. The values are given in millimeters and are measured with respect to the southwest corner of the print area. The center of the print area is X = 172.5 mm and Y = 173.5 mm.

MLP # — The modified Luyten Palomar number. This number represents a sequential numbering of the POSS plus Whiteoak plate areas (range 1-1037). The overall sequence is from north to south; within each declination band it is by increasing right ascension. Therefore, plate 1 is at the north pole and plate 1037 is at the southern limit of the Whiteoak extension. This numbering scheme also takes into account the nearly duplicate POSS plate areas (895 and 1619) which correspond to MLP numbers 723 and 724 respectively. Since the two plate centers are almost identical, when a source is assigned to one of the plates, typically it is assigned to both.

The POSS designations in this table are for the red plates. There are four different blue and red numbers as given below.

POSS-E	POSS-O	MLP
9	10	465
14	15	469
15	16	472
11	12	473

Two sample pages of the full data set are given here. The full data set will be available both in machine-readable form and as a NASA/GSFC Technical Memorandum (Nagy et al. 1983). If you would like to be placed onto a mailing list to obtain a copy please respond to T.A. Nagy (NASA/GSFC Code 681, Greenbelt, MD 20771).

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IRC #	SAO #	D	PA	POSS	X	Y	MLP
-30001	192357	828	18	8797	178	315	938
			0	8825	45	314	989
-30002	166063	537	162	577	158	55	826
			0	1158	38	54	881
-30003	166103	40	64	S 18	111	255	882
-30004	166130	14	76	577	84	27	826
-30005	166131	22	78	577	84	12	826
			0	S 18	84	336	882
-30006	192424	32	302	S 18	71	25	882
			0	8797	79	344	938
-30007	192430	30	273	S 18	62	57	882
-30008	192498	13	108	S 19	275	144	883
-30009	166367	50	59	S 19	155	161	883
-30010	166393	26	268	1271	129	80	827
-30011	166443	4	188	1271	93	76	827
-30012	166686	4	353	S 21	197	257	884
-30013	192918	727	322	S 21	88	45	884
-30014	193090	44	353	S 23	158	92	885
-30015	193122	6	1	S 23	119	5	885
			0	7987	210	321	941
-30016	167083	34	263	366	96	19	829
			0	S 23	75	346	885
-30017	167148	9	6	S 23	29	238	885
-30018	193263	20	309	S 22	258	14	886
			0	7987	39	332	941
-30019	167265	38	317	S 22	228	209	886
-30020	193467	39	163	S 22	27	83	886
			0	S 25	322	64	887
-30021	167826	371	347	1287	10	28	831
			0	367	321	30	832
-30022	193745	24	319	S 25	0	71	887
			0	S 28	295	74	888
-30023	167905	1462	132	S 28	221	307	888
-30024	167998	35	41	367	156	31	832
-30025	168026	740	284	S 28	138	188	888
-30026	193931	16	113	S 28	85	14	888
			0	8802	224	336	944
-30027	168329	28	282	897	159	16	833
			0	S 29	157	338	889
-30028	168373	50	275	S 29	118	202	889
-30029	168619	30	37	908	184	62	834
-30030	194477	6	269	S 30	57	95	890
-30031	194564	57	7	S 31	271	30	891
-30032	169060	62	32	1472	121	96	835
-30033	168198	590	109	1472	26	92	835
			0	948	339	84	836
-30034	168405	27	288	S 73	189	275	892
-30035	169478	24	87	S 73	138	201	892
-30036	168570	37	270	S 73	74	171	892
-30037	195148	21	26	S 73	50	127	892
-30038	169608	13	305	S 73	36	288	892
			0	S 72	343	289	893
-30039	195203	2	54	S 73	8	132	892
			0	S 72	305	135	893
-30040	195250	15	280	S 72	261	120	893
-30041	169897	32	70	893	40	30	837
-30042	170196	34	174	S 74	220	348	894
-30043	170313	33	262	1462	145	106	838
-30044	185902	20	287	S 74	28	113	894
			0	S 75	326	116	895

IRC #	SAO #	D	PA	POSS	X	Y	MLP
-30045	170542	28	18	888	295	96	839
-30046	170582	55	80	888	260	76	839
-30047	170618	20	254	S 75	229	320	895
-30048	170690	36	36	S 75	194	281	895
-30049	196158	262	137	S 75	125	79	895
-30050	196200	380	28	S 75	101	45	895
-30051	170917	248	246	S 75	82	214	895
-30052	171018	4	85	S 75	24	226	895
			0	S 51	327	228	896
-30053	171180	30	38	655	242	51	840
-30054	196547	390	19	S 51	155	89	896
-30055	171511	926	247	S 51	87	309	896
-30056	196657	111	246	S 51	77	119	896
-30057	171546	588	7	655	56	58	840
-30058	196713	32	229	S 51	34	139	896
			0	S 54	333	141	897
-30059	171672	29	74	655	0	45	840
			0	419	312	49	841
-30060	171660	578	103	419	309	11	841
			0	S 54	306	335	897
-30061	171688	28	82	419	307	92	841
-30062	171826	9	141	419	244	64	841
-30063	196905	27	267	S 54	210	24	897
-30064	171902	25	45	419	208	9	841
			0	S 54	205	332	897
-30065	171949	94	211	S 54	188	198	897
-30066	196941	28	229	S 54	185	147	897
-30067	196981	659	135	S 54	155	148	897
-30068	197019	15	41	S 54	138	53	897
-30069	172225	27	290	419	76	64	841
-30070	172504	50	254	1335	270	22	842
			0	S 77	268	346	898
-30071	172676	26	309	S 77	199	238	898
-30072	172797	38	59	S 77	162	295	898
-30073	172941	5	288	1335	119	123	842
-30074	197585	666	281	S 77	114	134	898
-30075	172999	27	262	S 77	100	208	898
-30076	173047	49	253	1335	87	54	842
-30077	173107	17	56	S 77	68	297	898
-30078	173150	35	257	S 77	53	230	898
-30079	197691	67	69	S 77	40	76	898
			0	S 55	335	77	899
-30080	197691	781	20	S 77	37	86	898
			0	S 55	333	88	899
-30081	173257	37	303	1335	19	69	842
			0	656	331	71	843
-30082	173283	28	203	1335	9	18	842
			0	656	319	20	843
			0	S 77	7	341	858
			0	S 55	317	344	899
-30083	173360	33	110	S 55	294	459	899
-30084	173453	90	166	656	272	46	843
-30085	173529	12	184	656	246	84	843
-30086	173535	228	148	S 55	238	224	899
-30087	173591	24	242	656	224	91	843
-30088	173594	175	1	656	223	107	843
-30089	173640	629	240	S 55	216	220	899
-30090	173622	13	181	S 55	214	303	899
-30091	173651	43	109	S 55	205	224	899
-30092	197964	24	144	S 55	196	89	898

IRC #	SAO #	D	PA	POSS	X	Y	MLP
+80032	2859	16	86	1433	91	307	24
			0	776	298	303	25
+80033	8946	18	183	776	243	191	25
+80034	2963	955	184	775	87	5	10
			0	1433	27	347	24
			0	776	224	316	25
+80035	8151	42	227	776	136	145	25
+80036	9404	35	301	832	262	83	26
+80037	9562	5	260	832	168	186	26
+80038	9606	18	296	832	144	71	26
+80039	9719	813	311	832	121	272	26
			0	1232	337	286	27
+80040	9757	22	190	832	59	11	26
			0	809	168	323	47
+80041	3443	41	359	832	60	298	26
			0	1232	271	286	27
+80042	3467	20	65	832	44	304	26
			0	1232	254	285	27
+80043	9973	502	151	1232	226	28	27
+80044	10007	14	288	1232	204	87	27
+80045	10030	180	222	1232	189	132	27
+80046	10024	479	18	1232	191	42	27
+80047	10031	38	72	1232	184	235	27
+80048	10100	8	28	1232	147	173	27
+80049	10127	202	23	1232	124	54	27
+80050	10158	5	187	1232	120	196	27
+80051	10180	19	94	1232	107	226	27
			0	1210	341	243	28
+80052	3658	28	73	1232	106	267	27
			0	1210	324	280	28
+80053	10211	238	334	1232	76	71	27
+80054	10437	20	20	1210	249	115	28
+80055	10440	15	34	559	194	315	49
+80056	10629	28	157	558	91	318	49
			0	560	331	328	50
+80057	10618	14	32	1213	253	115	13
			0	1210	70	119	28

IRC #	SAO #	D	PA	POSS	X	Y	MLP
+70194	20554	17	130	548	231	248	78
+70195	20665	447	197	548	176	107	78
+70196	10778	30	86	1217	325	53	29
			0	560	269	46	50
+70197	20703	25	144	555	338	275	51
			0	548	156	264	78
+70198	10790	17	148	1217	309	120	29
			0	560	257	114	50
+70199	10825	98	133	1217	294	53	29
			0	560	238	48	50
+70200	10842	9	29	1217	263	243	29
			0	560	217	239	50
+70201	20873	24	233	555	262	277	51
			0	548	81	277	78
+70202	20901	464	357	555	254	164	51
			0	548	57	167	78
+80001	4062	15	256	1213	152	24	13
+80002	4137	21	87	1213	97	57	13
+80003	4415	20	87	1214	208	224	14
+80004	4541	21	312	1214	124	28	14
+80005	4629	743	306	1214	84	183	14
			0	1226	335	205	15
+80006	4675	29	139	1214	23	82	14
			0	1226	319	88	15
+80007	4810	4	230	1226	215	221	15
+80008	4824	1	252	1226	221	27	15
+80009	594	24	105	1226	115	274	15
			0	1322	328	306	16
+80010	691	68	162	1328	313	12	5
			0	1226	40	317	15
			0	1322	242	315	16
+80011	5593	21	27	1322	27	18	16
			0	1256	344	34	17
			0	866	1	344	33
			0	975	236	337	34
+80012	5730	38	19	1256	254	51	17
+80013	5785	35	11	1256	210	107	17
+80014	5919	18	138	1256	145	179	17
+80015	5968	17	135	1256	118	127	17
+80016	6022	12	99	1256	83	130	17
+80017	6206	541	179	1295	273	40	18
+80018	6653	11	38	1295	47	262	18
			0	693	270	266	19
+80019	6656	34	146	1295	37	220	18
			0	693	277	223	19
+80020	7164	23	220	1326	240	94	20
+80021	7237	12	260	1326	174	166	20
+80022	7295	38	261	1328	133	205	20
+80023	7335	809	284	1326	102	64	20
+80024	7395	22	169	1326	53	205	20
			0	1339	299	207	21
+80025	7848	44	227	1374	217	135	22
+80026	7958	27	264	1374	115	190	22
+80027	7989	1082	8	1374	84	171	22
			0	768	342	179	23
+80028	8024	27	257	1374	47	97	22
			0	768	334	97	23
+80029	8120	4	120	768	249	38	23
+80030	8267	79	345	768	137	236	23
+80031	8274	4	270	768	128	167	23

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Seventeen Two-Micron Sky Survey Sources with Problematical Durchmusterung Identifications

R. S. Hill* and T. A. Nagy*

A correlation by celestial coordinates between the Two-Micron Sky Survey (Neugebauer and Leighton 1969) (TMSS) and the Smithsonian Astrophysical Observatory Star Catalog (Haramundanis et al. 1966) (SAO) was done by computer at NASA/Goddard Space Flight Center using program MATCH (Nagy and Hill 1981). The purpose of this effort was to produce a list giving the nearest SAO star on the celestial sphere on each TMSS source, with no attempt to identify the SAO star positively to be the TMSS source.

The TMSS and SAO catalogues both supply Durchmusterung (DM) numbers for all possible entries. Therefore, it was possible to compare the MATCH list of SAO candidates for TMSS sources with DM identifications given in the TMSS catalogue. A computer program was run to do this, and it found 17 cases where the TMSS identifies the source with some DM/SAO star that is not the closest one in angular distance. This result is not unexpected, since the authors of the TMSS take into account criteria besides angular distance. The TMSS criteria are as follows:

$$\left|\alpha_{\text{candidate}} - \alpha_{\text{source}}\right| \leq 12^{\text{S}} = 180'' \; (18^{\text{S}} = 270'' \text{ for variable stars})$$

$$\left|\delta_{\text{candidate}} - \delta_{\text{source}}\right| \leq 3' = 180''$$

Where more than one candidate passes this test, the one with the highest predicted flux at 2.2 microns is adopted. (In the case of TMSS -10442, the given distance criterion appears to have been waived. See Table 1.)

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Bidelman (1980) gives identifications of TMSS sources. The 17 sources in this study were compared manually with Bidelman's data. In general, Bidelman agrees with the identifications in the TMSS. Where Bidelman gives only Henry Draper Catalogue (HD) numbers, DM numbers were obtained from Nagy and Mead (1978). This applies to TMSS 00074, 20525 and 60267.

Table 1 gives the results of this study. It is not suggested that the closest SAO star to each TMSS source is necessarily the correct identification. Nevertheless, such stars may be components of sources described in the TMSS as unresolved. Perhaps in some cases they would be useful as observational guide stars. The following remarks should clarify data in Table 1 whose meaning is not self-evident:

$\epsilon"_{TMSS}$ - the distance in arc seconds between each source and the SAO coordinates of the DM star identified with it in the TMSS catalogue

$\epsilon"_{MATCH}$ - the distance in arc seconds between each TMSS source and the SAO star nearest to it in angular distance

Bid. - =T if Bidelman (1980) agrees with the TMSS identification of the source
=M if Bidelman identifies the source with the MATCH candidate
- = none if Bidelman provides no identification for the source

YBS - information taken directly from the Yale Bright Star Catalogue (Hoffleit 1964) (YBS) for sources which Bidelman identifies with YBS stars

unresolved? - = YES if the TMSS gives the following remark on the source: "2 unresolved stars probably contribute to K and I magnitudes (SAO search)"

The scope of this study is restricted by the fact that 2209/5612 (39%) of TMSS sources have no DM identification in the TMSS catalogue. 1362/258997 SAO stars (0.5%) have no DM identification in the SAO catalogue.

References

Bidelman, W. P. 1980, Spectral Classifications for Stars of the Caltech Two-Micron Survey, Publications of the Warner and Swasey Observatory, 2, no. 6.

Haramundanis, K. et al. 1966, Smithsonian Astrophysical Observatory Star Catalog, Smithsonian Publication 4652.

Hoffleit, D. 1964, Catalogue of Bright Stars, Third Revised Edition, Yale University Observatory, New Haven, Connecticut.

Nagy, T. A. and Hill, R. S. 1981, Astron. Data Center Bull. 1, 113.

Nagy, T. A. and Mead, J. M. 1978, HD-SAO-DM Cross Index, NASA TM 79564.

Neugebauer, G. and Leighton, R. B. 1969, Two-Micron Sky Survey, NASA SP-3047.

Table 1. Results of Comparison Between TMSS, MATCH Candidate List and Bidelman Identifications.

TMSS No.	TMSS Identification DM No.	SAO No.	Sp (SAO)	m_v (SAO)	ϵ"TMSS	unresolved?	Closest SAO Star DM No.	SAO No.	Sp (SAO)	m_v (SAO)	ϵ"MATCH	Bid.	YBS No.	YBS double star cat.	YBS variable star cat.	Note
-30363	CD -26° 12858	186357	K5	8.8	182	-	CD -26° 12856	186354	F5	9.4	130	None	-	-	-	
-20175	BD - 17° 2691	154745	K0	5.9	67	YES	BD -17° 2692	154746	K2	7.1	48	T	3554	-	-	
-20238	BD -15° 3482	157323	A0	3.1	49	YES	BD -15° 3481	157322	-	9.2	46	T	4757	8572A	VAR?	
-20305	BD - 19° 4307	159682	B1	2.9	9	YES	BD -19° 4308	159683	B1	5.1	6	T	5984	9913A	VAR?	
-20466	BD -16° 4818	161359	-	9.6	105	YES	BD -16° 4816	161357	K5	9.2	60	M	-	-	-	
-10442	BD -6° 4816	142447	K0	8.2	271	-	BD -6° 4817	142451	G5	8.8	264	None	-	-	-	
00074	BD -4° 1146	132163	M7e	7.5	59	-	BD -4° 1144	132159	G0	10.2	56	T	-	-	-	*
00076	BD -0° 983	132220	B0	2.5	55	-	BD -0° 982	132221	B0	6.9	15	T	1852	4134A	δ Ori	*
00205	BD +3° 2504	118875	K0	5.2	63	-	BD +3° 2505	118876	G5	8.0	45	T	4418	-	-	
00418	BD -3° 4532	143181	K2	8.5	155	-	BD -3° 4530	143178	F8	8.5	47	None	-	-	-	
20293	BD +17° 2964	101951	G5	5.3	48	YES	BD +17° 2695	101952	G5	6.5	27	T M	6009 6008	9933B 9933A	- -	*
20505	BD +19° 4691	107073	K0	4.3	32	-	BD +19° 4690	107072	-	9.1	6	T	8173	14909	-	
20525	BD +17° 4665	107539	Mc	8.7	56	YES	BD +17° 4664	107538	-	9.0	29	T	-	-	-	
30084	BD +26° 655	76558	K0	5.1	50	-	BD +26° 712	76557	F8	9.0	42	T	1348	3137	-	
30370	BD +27° 3410	87301	+++	3.2	37	-	BD +27° 3411	87302	B9	5.4	17	T	7417	12540A	VAR?	*
60267	BD +62° 1725	18388	Mb	7.5	32	YES	BD +62° 1726	18389	-	9.4	29	T	-	-	-	
60356	BD +57° 2548	34508	+++	4.0	38	-	BD +57° 2547	34506	A0	7.5	12	T	8571	15987A	δ Cep	*

Notes:

00074 - TMSS identifies this star as S Ori
00076 - TMSS gives GC 6848, but the YBS gives GC 6847 for this star
20293 - Bidelman (1980) gives two identifications
30370, 60356 - SAO spectral type +++ means composite spectrum.

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COMPUTERIZED RETRIEVAL OF DATA FOR VISUAL BINARY STARS

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ABSTRACT

Software for the retrieval of all observations of a visual binary system from the *Observational Catalogue of Visual Double Stars* is described. It is planned to eventually store the data on-line, so that an automated dial-up retrieval system can be developed.

I. INTRODUCTION

It is frequently desired to examine all observations of a multiple-star system in order to evaluate the system's motion or the consistency of the observations. The *Index Catalogue of Visual Double Stars (IDS)* (Jeffers, van den Bos and Greeby 1963) and its updated version on magnetic tape (Worley 1977) give first and last observations of a system only. The *Observational Catalogue of Visual Double Stars* is maintained at the U.S. Naval Observatory for purposes of archiving all double-star observations (Worley 1980). The current data retrieval program uses the data stored on magnetic tape, but it is planned to transfer them to disk in compressed format and to develop an interactive retrieval program. The development will not occur until an updated version of the catalogue, currently being prepared by C. E. Worley, is available.

II. DATA INPUT AND SAMPLE OUTPUT

Data input consists merely of the *IDS* position code (see sample run) for each system. The codes should always be checked by locating the system in the *IDS* first. Sample output is shown on the following page.

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Jeffers, H. M., van den Bos, W. H. and Greeby, F. M. 1963, *Pub. Lick Obs.*, 21.

Worley, C. E. 1977, in *IAU Colloquium No. 35, Compilation, Critical Evaluation and Distribution of Stellar Data*, ed. C. Jaschek and G. A. Wilkins (Dordrecht: D. Reidel Publishing Co.) p. 179.

Worley, C. E. 1980, *Inform. Bull. CDS*, No. 18, p. 20.

OBSERVATIONAL CAT OF VISUAL DOUBLE STARS

DATA SEARCH

ASTRONOMICAL DATA CENTER
NASA GODDARD SPACE FLIGHT CENTER

DATA EXPLANATIONS AND NOTES:

IDS CODE - The RA and DEC code of the system as given in the IDS. Other identifications and/or names are given when known.

YEAR - The date of this measure of PA and/or separation or of this observation of the system.

MAGS - The magnitudes (visual) of the components or the magnitude difference. In the latter case the difference is given following the colon and the field preceding the colon is blank.

N - The number of nights observed. If > 9 a code "O" will be found in the third comment column, or "A,B,C" in second comment column.

REF - The reference identifier assigned to the source publication by the cataloguer.

APER - The aperture of the instrument used to make the observation, in inches (cm/2.54).

CCCC - Four columns of note codes, as summarized following:

1 - A Refractor, micrometer; B Reflector, micrometer; C Comparison image micrometer; D Heliometer; E Interferometer; G Photographic with astrograph; H Photographic with medium- or long-focus technique; L Electronographic camera; M Meridian circle observation; N Transit interferometer; O Photographic with ocular enlargement; R Occ use of micrometer plus comparison image micrometer on same star.

2 - 1 Published distance or hour angle correction (as in MAB or MRM measure list); 2 Possible misprint in publication (either corrected or not by cataloguer); 3 Uncertain or low weight in the opinion of cataloguer; 5 Published 3rd decimal in date (short period pair by Kui); 6 Unpublished in orbit quotation; 7 B's omissions of cataloguer's changes; 8 Add 100 to the aperture; 9 Distance <, not >, indicated; O Corrected by author; A > 9 nights, add 10 to number in N column; B > 19 nights, add 20 to number in N column; C > 29 nights, add 30 to number in N column; V A magnitude, not a magnitude difference, in magnitude field following the colon; X General note worth reference.

3 - A Movement direct; B Movement retrograde; C Orbit comparison, residuals; D Difficult; E Elongation; F Too faint or not seen; G Infrequently measured; H 100° to be added to SEP; I Identification; J Possible motion; K Distance diminishes; L Optical; M Multiple noted; N Not round; O > 9 nights, add 10 to number in N column; P Separated; Q Quadrant; R Round; S Single; T Too close; U Uncertain; V Variable; W Fixed; X General note worth reference; Y Distance increases; Z Measurer especially named; 2 200° to be added to SEP; 3 300° to be added to SEP; 4 400° to be added to SEP; 5 Estimated separation; 6 Separation given in arcminutes instead of arcseconds.

4 - 0 Post-IDS measure added by Lick.
1 Post-IDS measure added by USNO.
2 Old measure prior to publication of IDS catalogue.

OBSERVATIONAL CAT OF VISUAL DOUBLE STARS

DATA SEARCH

ASTRONOMICAL DATA CENTER
NASA GODDARD SPACE FLIGHT CENTER

INPUT IDS CODE = 8118N3109 ED+31 1779,STF 1212

RA(1900)	DEC	RA(2000)	DEC	ADS	YEAR	PA	SEP	MAGS	N	REF	APER	CCCC		
08 11.8	N31	09 08	18.0	N30 51	6722	1911.628	236.0	5.52	. : .	3	FOX54	18 A	2	RECORD 96630
08 11.8	N31	09 08	18.0	N30 51	6722	1915.18	236.6	5.50	8.0: 9.5	3	DOO30	18 A	2	RECORD 96631
08 11.8	N31	09 08	18.0	N30 51	6722	1945.60	237.7	5.43	. : .	2	FAT56	12 A	2	RECORD 96632
08 11.8	N31	09 08	18.0	N30 51	6722	1931.48	238.2	05.21	. : .	3	BON56	12 A		RECORD 96633
08 11.8	N31	09 08	18.0	N30 51	6722	1952.866	239.81	5.407	8.9: 9.8	1	OSB01	20 H	1	RECOMD 96634

ALL OBSERVATIONS FOUND FOR THIS IDS CODE, N = 5

INPUT IDS CODE = 12308S 52 ED-00 2592,BAI 872

RA(1900)	DEC	RA(2000)	DEC	ADS	YEAR	PA	SEP	MAGS	N	REF	APER	CCCC		
12 30.8	S00 52	12 35.9	S01 25		1892.33	206.0	05.4	08.0:10.5		BAL81	13 G		RECORD 142962	
12 30.8	S00 52	12 35.9	S01 25		1943.34	204.3	04.93	08.9:13.0	1	MST81	27 A		RECORD 142963	
12 30.8	S00 52	12 35.9	S01 25		1943.54	207.6	04.94	08.9:12.6	1	MST81	27 A		RECORD 142964	
12 30.8	S00 52	12 35.9	S01 25		1970.53	204.5	4.64	. : 3.0	2	HLN60	27 A	1	RECOMD 142965	

ALL OBSERVATIONS FOUND FOR THIS IDS CODE, N = 4

INPUT IDS CODE = 16553S2017 ED-20 4606,HJ 4911

RA(1900)	DEC	RA(2000)	DEC	ADS	YEAR	PA	SEP	MAGS	N	REF	APER	CCCC		
16 55.3	S20 17	17 01.2	S20 26		1874.	.	.	. : .	1	BU 31	06 A	S	RECORD 195761	
16 55.3	S20 17	17 01.2	S20 26		1886.54	000.	.	. : .	1	HJ 03	18 B		RECORD 195762	
16 55.3	S20 17	17 01.2	S20 26		1901.	.	.	. : .	1	BU 31	40 A	S	RECORD 195763	
16 55.3	S20 17	17 01.2	S20 26		1909.50	356.7	98.74	. : .	2	ZIM56	12 A		RECORD 195764	
16 55.3	S20 17	17 01.2	S20 26		1920.5	.	.	. : .	1	DAW55	17 A	S	RECORD 195765	

ALL OBSERVATIONS FOUND FOR THIS IDS CODE, N = 5

END OF INPUT IDS CODES

END OF OBS SEARCH: OBSERVATIONS EXAMINED = 195766
INPUT RECORDS PROCESSED = 3
INPUT RECORDS ABSENT = 0

ADC Bull. (July 1983) 1, 195-205

Faint Blue Objects at High Galactic Latitude: A Machine-Readable Version

A. Warnock III* and P. D. Usher*

ABSTRACT

Objects have been selected for relative ultraviolet excess from Palomar Schmidt fields centered on Kapteyn Selected Areas 57, 29 and 28. Object selection to B $\sim$ 20 has been made by a novel semiquantitative technique, permitting a two parameter color classification. The population of objects belonging to color classes 1A, 1 and 1B should be comprised primarily of quasars and white dwarfs and should be virtually complete to B = 18.5 mag.

Positions have been determined by réseau astrometry and should have standard deviations of $\sim$ 3"-5" or better.

Subsequent fields will be added if and when they become available.

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Introduction

This catalog is a machine-readable compilation of all sources selected for relative ultraviolet excess from three color (u,b,v) plates taken with the 48 inch Palomar Schmidt Telescope. Three fields have been surveyed so far, centered on Kapteyn Selected Areas 57(Usher 1981 = Paper I), 29(Usher, Mattson and Warnock 1982 = Paper II) and 28(Usher and Mitchell 1982 = Paper III), yielding color classifications, B magnitudes and positions for 2363 objects.

The methodology employed in selecting these objects is described in detail in Paper I. Briefly, the three color images are scanned three times by eye to select the bluest objects in each of the 7 × 7 = 49 zones which cover the plate. The three images for each object are then measured with a Cuffey variable iris astrophotometer to yield iris "magnitudes" u_i, b_i, and v_i and iris "colors" u_i-b_i and b_i-v_i. Iris color-color diagrams for discrete bins of b_i are constructed (see Fig. 1). Experience shows that oversampling allows for fairly accurate determination of the subdwarf region. With the subdwarfs so defined, the locations of the other populations can be inferred with a reasonable degree of certainty. The color classes depicted in Fig. 1 are then assigned based on the following criteria:

For U-V<0:

1A: Above the blackbody line by $\Delta(U-B) = 0.15$ mag or more. This region is populated primarily by quasars

1: Within about $\Delta(U-B) = \pm 0.15$ mag of the blackbody line

1B: Below the blackbody line by about $\Delta(U-B) = 0.15$ mag, in the general vicinity of the white dwarf cooling curve

1BS: Close to the luminosity class III-V line for blue halo stars

For U-V$\geq$0:

1C: Above the blackbody line in the region where N and lineless spectrum galaxies are often located

2: Below the blackbody line but not within the color class 3 region

3: Within the region of the subdwarfs and halo horizontal-branch stars.

Approximate photographic B magnitudes have been derived by iris photometry from photoelectric standard B magnitudes which were generously made available by A. Sandage. Positions have been derived for epoch 1950 using a revival of classical réseau techniques (Warnock and Usher 1981; Warnock, Mattson and Usher 1982). The method gives reliable positions to 3-5 arcseconds for the SA57 field and to about 1 arcsecond for the SA29 and SA28 fields.

The Catalog

The selected sources are listed in the catalog in order of increasing right ascension within each field. The fields and associated running numbers and sky coverage are given in Table I. Subsequent fields will be added if and when they become available. Table II gives a description of the columns of the catalog and the FORTRAN format used to write them. Table III shows some sample records from the catalog. The notes in bytes 38 to 52 are abbreviations of the following:

E: Edge zone; object is within $\sim 1^{o}$ of the plate edge

G: galaxy as determined from morphology plate

CG: compact galaxy

C: confused source

Q: known quasar (from Veron and Veron 1974 and subsequent updates)

?: uncertainty

R: remark (given in bytes 59 to 118)

References

Usher, P. D. 1981 *Ap. J. Supp.* 46, 117 (Paper I).

Usher, P. D., Mattson, D. and Warnock, A. 1982 *Ap. J. Supp.* 48, 51 (Paper II).

Usher, P. D., and Mitchell, K. J. 1982 *Ap. J. Supp.* 49, 27 (Paper III).

Veron, M. P., and Veron, P. 1974 *Astr. and Ap. Supp.* 18, 309.

Warnock, A., and Usher, P. D. 1981 *Pub. Astr. Soc. Pac.* 92, 799.

Warnock, A., Mattson, D., and Usher, P. D. 1981 *Pub. Astr. Soc. Pac.* 93, 655.

Table I

Regions of right ascension α(1950) and declination δ(1950) covered by the catalog entries for each field

US #	α(1950)		δ(1950)		Field Center
	from	to	from	to	
1 to 634	$12^h52^m15^s.9$	$13^h20^m46^s.7$	$+26^o30'39''$	$+32^o39'30''$	SA57
635 to 1184	$09^h25^m03^s.1$	$10^h00^m15^s.1$	$+41^o26'52''$	$+47^o39'27''$	SA29
1185 to 2363	$08^h28^m10^s.8$	$09^h04^m49^s.6$	$+41^o36'27''$	$+47^o58'53''$	SA28

Table II

Tape Contents: Catalog of Faint Blue Objects at High Galactic Latitude

BYTES	DESCRIPTION	SUGGESTED FORMAT
1-4	US (running) NUMBER 1-634 are from SA57 635-1184 are from SA29 1185-2363 are from SA28	I4
5	blank	1X
6-9	Color Class (see text)	4A1
10	blank	1X
11-14	B magnitude determined by iris photometry	F4.1
15	magnitude uncertainty (:)	A1
16	blank	1X
17-18	Hours of right ascension	I2
19	blank	1X
20-21	Minutes of right ascension	I2
22	blank	1X
23-26	Seconds of right ascension	F4.1
27	blank	1X
28	Declination sign (+) or (-)	A1
29-30	Degrees of declination	I2
31	blank	1X
32-33	Arc-minutes of declination	I2
34	blank	1X
35-36	Arc-seconds of declination	I2
37	blank	1X
38-52	Notes from original catalog (see text for abbreviations)	15A1

53	blank	1X
54-57	Field Identification (e.g. SA57)	4A1
58	blank	1X
59-118	Additional remarks	60A1

Table III

Sample records from the Faint Blue Object Catalog

301	3	18.7	13	5	25.1	+29	46	29		SA57		
302	3	19.2	13	5	25.9	+28	12	3		SA57		
303	3:	20.1	13	5	26.8	+29	49	1		SA57		
304	3	19.1	13	5	31.4	+31	46	58		SA57		
305	1ES	18.5	13	5	31.5	+30	51	46		SA57		
306	2	19.0	13	5	32.2	+31	0	22		SA57		
307		16.6:	13	5	37.1	+30	36	14	C	SA57		
308	1C	18.8	13	5	41.6	+30	6	24		SA57		
309	3	18.3	13	5	44.1	+27	55	15		SA57		
310	3	19.7	13	5	46.0	+29	50	47		SA57		
311	3	18.3	13	5	48.2	+31	43	23		SA57		
312	3	18.9	13	5	49.2	+28	14	3	R	SA57	CONFUSING GALAXY TO S	
313		0.0	13	5	52.4	+29	17	24	G	SA57		
314	3:	19.1	13	5	53.3	+29	35	17		SA57		
315	1A	18.0	13	5	57.3	+28	38	49		SA57		
316	3	17.0	13	5	58.6	+30	56	22		SA57		
317	1B	17.4	13	6	7.4	+30	21	33	Q=W23694	SA57		
318	3	18.2	13	6	10.0	+31	12	28		SA57		
319	2:	16.6:	13	6	17.6	+29	39	7	C	SA57		
320	3	18.5	13	6	21.7	+29	36	2		SA57		

Figure Caption

Figure 1.--Iris color-color diagram for objects selected in the field centered on SA57, falling in a bin size b_i corresponding to B = 16.5 - 17.6. Lines show the inferred location of the blackbody curve, the U - V = 0 criterion, main sequence and F and G subdwarf population. Regions occupied by color classes 1A, 1, 1B, 1C, 2 and 3 are shown. Axes are in arbitrary units. Diamonds connote known quasars, filled circles other cataloged objects; dots are uncataloged objects. Estimated probable errors in the photometry are shown in the top right corner of the diagram. (from Usher 1981)

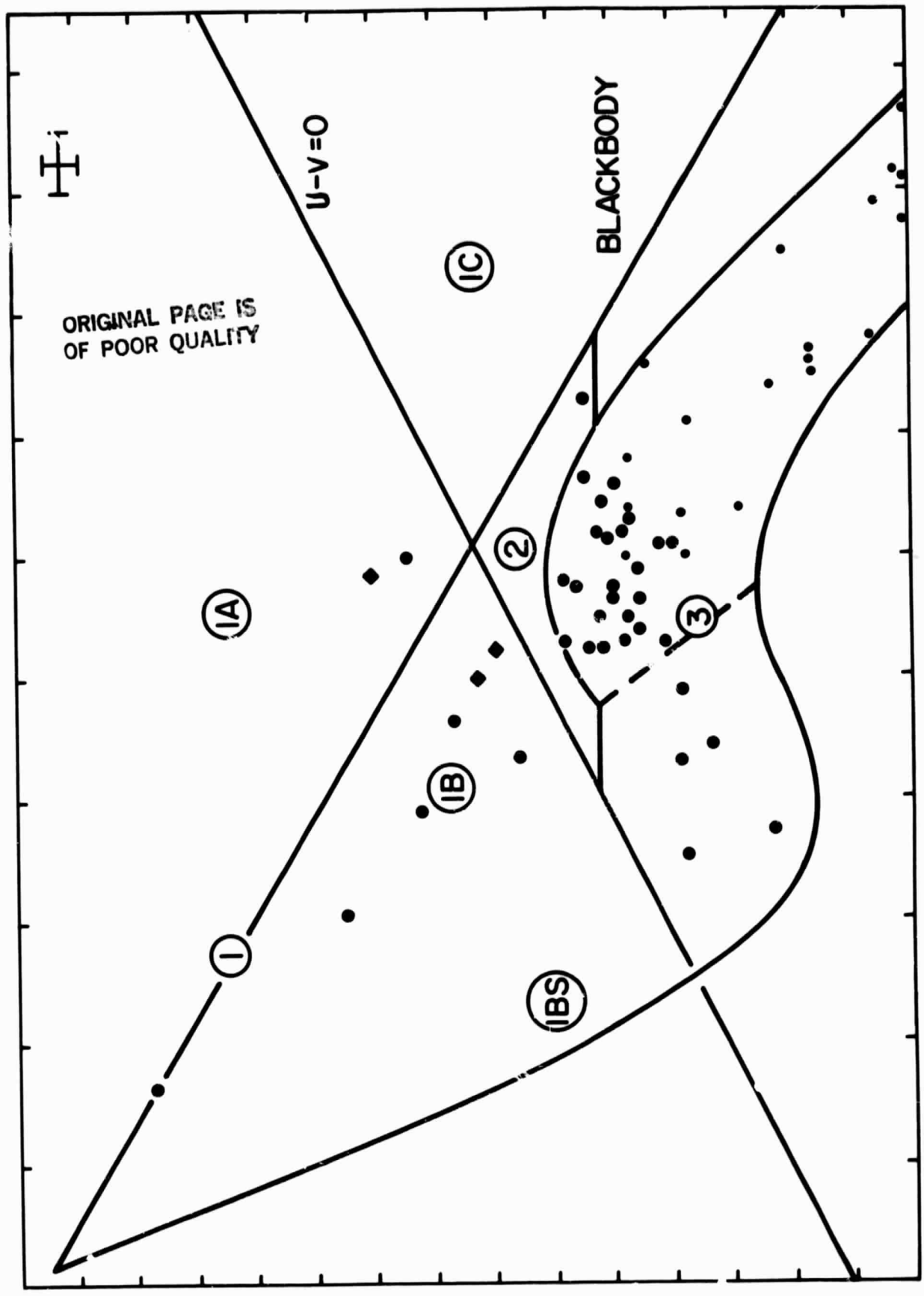
U-V=0
BLACKBODY
IC
IA
IB
IBS
1
2
3
ORIGINAL PAGE IS
OF POOR QUALITY
$b_j - v_j$
$u_j - b_j$

Figure 1

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AVAILABILITY OF THE MACHINE-READABLE VERSION OF THE SIXTH CATALOGUE OF GALACTIC WOLF-RAYET STARS

R. S. Hill* and T. A. Nagy*

The Sixth Catalogue of Galactic Wolf-Rayet Stars (van der Hucht et al. 1981) is a survey of current knowledge of Wolf-Rayet stars and related objects. From the tabular data and bibliographical information in this publication, two selected tables have been made machine readable at the ADC: Table VIII, Galactic Wolf-Rayet Stars (Population I) and Table IX, Central Stars of Planetary Nebulae of Type [WR], [WR-Of], [OVI], [WC10] and [WC11]. These tables were keypunched at NASA/Goddard Space Flight Center from an early preprint, then were modified in accordance with revised preprints acquired from time to time thereafter. When the catalogue appeared in print, these datasets were modified to agree with the published version.

The machine-readable version handles notes and references somewhat differently from the published version. In the published version, notes and references are pointed to sometimes with letters, sometimes with Arabic numerals, sometimes with Roman numerals. For the machine-readable version, a unified file of notes and references identified by Arabic numerals has been generated. The full bibliographic form of each reference is given. (Only those references pointed to by Tables VIII and IX are included; those used only in the text and other tables of the catalogue have been omitted.)

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Some information from the published version of the catalogue is reproduced in the documentation of the machine-readable version (Hill and Nagy 1982) for the convenience of the user. In particular, notes on the individual stars, references, catalogue classification of WR spectra based on the Smith (1968) system and distribution of Wolf-Rayet subclasses are given.

References

Hill, R. S. and Nagy, T. A. 1982, SASC Document SSD-T-1-5069-0159-82.

Smith, L. F. 1968, Monthly Notices Roy. Astron. Soc., 138, 109.

van der Hucht, K. A., Conti, P. S., Lundstrom, I. and Stenholm, B.: 1981, The Sixth Catalogue of Galactic Wolf-Rayet Stars, Their Past and Present, Space Science Reviews, 28, no. 3, p. 227.

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DECLINATION VERSUS MAGNITUDE DISTRIBUTION OF TWO ASTRONOMICAL CATALOGUES

T. A. Nagy* and R. S. Hill*

The distribution of catalogue sources as a function of two of the basic astrophysical parameters in the catalogue is of interest to both observers and theoreticians. The Astronomical Data Center, in working with astronomers, prepares requested statistics on certain catalogues. Since these data are of general interest, they are given here in tabular form.

The magnitude distribution (one magnitude bins) of sources from the Two-Micron Sky Survey (Neugebauer and Leighton 1969) as a function of declination (five degree bins) is given for both the I and K magnitudes in Tables 1 and 2 respectively. Only magnitudes that were on scale are included in these distributions. The questionable I magnitudes are also included, since a value is given for this datum.

Table 3 lists a similar distribution of Equatorial Infrared Catalogue (No. 1) (Sweeney et al. 1978) sources. The magnitude bins for this table are given in half magnitudes. In all three tables, the lower limit of the declination range is inclusive.

References

Neugebauer, G. and Leighton, R. B. 1969, Two-Micron Sky Survey, NASA SP-3047.

Sweeney, L. H., Heinsheimer, T. F., Yates, F. F., Maran, S. P., Lesh, J. R. and Nagy, T. A. 1978, "Interim Equatorial Infrared Catalogue, Number 1", TR-0078 (3409-20)-1, The Aerospace Corp.

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Table 1. Declination Versus I Magnitude Range of Sources in the Two-Micron Sky Survey Catalogue.

δ°_{lower}	δ°_{upper}	2≤I<3	3≤I<4	4≤I<5	5≤I<6	6≤I<7	7≤I<8	8≤I<9	9≤I<12	Totals
-90	-35	0	0	0	0	0	0	0	0	0
-35	-30	2	15	36	41	45	16	9	2	166
-30	-25	12	26	59	91	60	37	7	1	293
-25	-20	8	27	66	89	64	44	14	2	314
-20	-15	12	26	69	97	71	33	5	0	313
-15	-10	13	17	79	92	64	27	11	1	304
-10	-5	15	28	62	67	62	36	20	4	294
-5	0	6	25	70	70	44	40	11	4	270
0	+5	2	31	54	75	62	16	16	2	258
+5	10	9	28	64	81	68	21	1	3	275
10	15	2	25	52	77	59	28	7	1	251
15	20	11	34	67	77	54	13	3	0	259
20	25	13	33	57	79	64	28	6	2	282
25	30	6	29	44	83	49	28	6	0	245
30	35	4	27	61	77	56	22	8	2	257
35	40	5	30	55	97	58	37	18	5	305
40	45	5	22	47	73	39	33	6	3	228
45	50	8	23	52	72	74	28	8	1	266
50	55	5	11	38	66	48	28	4	3	203
55	60	8	22	46	64	59	24	3	1	227
60	65	7	14	40	50	47	27	10	0	195
65	70	4	8	35	35	23	12	5	0	122
70	75	0	9	25	17	14	8	2	0	75
75	80	0	7	14	18	4	3	2	0	48
80	85	1	0	4	1	2	0	0	0	8
85	90	0	0	0	0	0	0	0	0	0
Totals		158	517	1196	1589	1190	583	182	37	5458

Table 2. Declination versus K Magnitude Range of Sources in the Two-Micron Sky Survey Catalogue.

δ^{o}_{lower}	δ^{o}_{upper}	$-2 \leq K < -1$	$-1 \leq K < 0$	$0 \leq K < 1$	$1 \leq K < 2$	$2 \leq K < 3$	$3 \leq K < 4$	Totals
-90	-35	0	0	0	0	0	0	0
-35	-30	0	1	13	33	117	3	167
-30	-25	2	7	23	63	203	4	302
-25	-20	1	8	23	72	216	5	325
-20	-15	2	6	17	62	226	4	317
-15	-10	1	3	24	70	204	5	307
-10	-5	1	8	28	45	214	6	302
-5	0	1	2	22	66	177	5	273
0	+5	1	5	12	50	189	3	260
+5	10	0	9	24	69	177	6	285
10	15	1	3	14	72	164	3	257
15	20	4	10	19	70	164	0	267
20	25	0	11	20	55	195	6	287
25	30	1	3	15	61	167	4	251
30	35	1	6	26	64	168	3	268
35	40	1	5	30	65	198	9	308
40	45	0	7	17	53	158	1	236
45	50	4	5	28	57	179	5	278
50	55	1	3	12	42	144	3	205
55	60	0	4	19	60	147	4	234
60	65	0	4	12	62	119	2	199
65	70	0	3	12	27	81	1	124
70	75	1	0	4	19	52	0	76
75	80	0	1	6	11	31	0	49
80	85	0	1	0	1	6	0	8
85	90	0	0	0	0	0	0	0
TOTALS		23	115	420	1249	3696	82	5585

Table 3. Declination Versus 2.7 μm Magnitude Range of the Sources in the Equatorial Infrared Catalogue No. 1.

	Declination Limits (degrees)								
Magnitude Range	δ_{lower} -10	δ_{upper} -5	δ_{lower} -5	δ_{upper} 0	δ_{lower} 0	δ_{upper} +5	δ_{lower} +5	δ_{upper} +10	Totals
$-5.0 \leq m < -4.5$	0		0		0		1		1
$-4.5 \leq m < -4.0$	0		0		0		0		0
$-4.0 \leq m < -3.5$	0		0		0		0		0
$-3.5 \leq m < -3.0$	0		1		0		0		1
$-3.0 \leq m < -2.5$	0		0		0		0		0
$-2.5 \leq m < -2.0$	0		0		1		0		1
$-2.0 \leq m < -1.5$	0		3		1		0		4
$-1.5 \leq m < -1.0$	0		0		1		3		4
$-1.0 \leq m < -0.5$	5		0		2		3		10
$-0.5 \leq m < 0.0$	8		5		4		5		22
$0.0 \leq m < +0.5$	14		12		8		10		44
$+0.5 \leq m < +1.0$	15		25		11		16		67
$+1.0 \leq m < +1.5$	6		6		23		23		58
$+1.5 \leq m < +2.0$	13		20		32		49		114
$+2.0 \leq m < +2.5$	19		15		34		65		133
$+2.5 \leq m < +3.0$	26		14		42		81		163
$+3.0 \leq m < +3.5$	20		5		35		100		160
$+3.5 \leq m < +4.0$	2		0		7		66		75
$+4.0 \leq m < +4.5$	0		0		1		38		39
Totals	128		106		202		460		896

ADC Bull. (July 1983) 1, 212-214

THE NEW MACHINE-READABLE VERSION OF THE *SAO-HD-GC-DM CROSS INDEX CATALOG*

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National Space Science Data Center
NASA/Goddard Space Flight Center

I. INTRODUCTION

A useful catalog of cross references among star designations in the *SAO, HD, GC* and DM catalogs was prepared by Morin (1973, Obs. de Meudon, unpublished) by cross referencing via DM numbers to add *HD* identifiers and via *HD* to add *GC* identifiers. The machine-readable *SAO* catalog contains cross references to *HD;* therefore, as a prelude to correcting the *SAO*, the cross index catalog has been analyzed and corrected. The cross identifiers, which account for most of the errors in the *SAO*, can now be inserted into the new *SAO* automatically.

II. PRIMARY PROBLEMS

1. Several problems resulted from automatic cross referencing from *SAO* to *HD* via DM numbers and thence via *HD* to *GC*.

   (*a*) The *SAO* does not distinguish DM numbers of components of double and multiple systems.

   (*b*) The *SAO* contains no provision for identifying *BD* supplemental stars (added as footnotes to the *BD* and assigned lower case letter designations).

   (*c*) The *SAO* omitted DM numbers for many stars which have them, primarily, but not exclusively, *FK3* stars omitted from *FK4* (multiple systems which complicate DM identifications anyway).

   (*d*) As usual, there is confusion between the Cordoba and Cape Photographic Durchmusterungen for stars in the southern hemisphere.

III. PROCEDURE

In order to construct unique DM numbers for each *SAO* star, the catalog was sorted by DM number and all stars having identical DM numbers were isolated. A special catalogue of *BD* supplemental stars was prepared (Warren and Kress 1980) and all supplemental stars identified and appended with their letter designations. Using the *SAO* positions, separations and position angles were computed for the remaining stars and compared against the measures reported in the *Index Catalogue of Visual Double Stars (IDS)*. Component designations were thus identified for nearly a thousand multiple systems; for stars not included in the *IDS*, designations were assigned according to magnitude.

Correction lists published by Bischoff (1978) and by Hoffleit (1980) and supplied by W. L. Stein (1980, private communication) were added to the correction data set.

In order to complete the *HD* cross references, we wished to add numbers from the *Henry Draper Extension (HDE)* to the *SAO* cross index records. A separate catalogue of *SAO* stars having no *HD* designations was therefore prepared. A catalogue of *HDE-DM* cross references by Bonnet (1978) supplied many *HDE* numbers, while the *HDE* catalogue itself was used for regions not included in Bonnet's file. For declination zones +50° to +60°, where the *HDE* lists only Astronomische Gesellschaft (*AG*) numbers, *BD* designations were found by cross referencing through the *Yale Zone Catalogue* for that band. *HD* and *GC* numbers were determined manually for many components of double stars and *GC* numbers found for *SAO* stars contained in the *GC*, but not the *HD*. (For non *HD* stars the *GC* supplies a DM number in the *HD* field. For GC stars with neither DM nor *HD* designation, positions were used to determine the *GC* numbers.)

The *HD* duplicity codes, presumably from the Strasbourg *Catalogue of Stellar Identifications* (CSI, see Ochsenbein *et al.* 1981 and references therein) were not assigned in a consistent manner, so the codes were examined and changed to an internally consistent system based upon visual-magnitude difference. While photographic magnitudes would have been more appropriate, they are often not given in the *SAO* and appear less consistent when they are given. It must be made clear that the *HD* codes represent the *HD* catalogue designations only with respect to the *SAO* records, i.e., a catalogued *SAO* star represents one or more *HD* numbers and the magnitude difference determines whether or not a code is assigned. The codes have the following meanings:

0 the *SAO* number represents a single *HD* star in that there is no companion with $\Delta m_v \leq 0.3$ mag that does not have a separate *HD* number;

1 the *SAO* star represents the brighter component of an *HD* star having a companion of $\Delta m_v \leq 0.3$ mag or, for companions of equal brightness, the A component;

2 the *SAO* star represents the fainter component of an *HD* star having a companion of $\Delta m_v \leq 0.3$ mag or, for companions of equal brightness, the B and/or C component;

9 the *SAO* star represents two consecutive *HD* stars and the lower *HD* number is always given; thus, 1799579 is HD179957/8.

In the southern hemisphere, pairs of *SAO* entries were listed for which successive entries are within 2 arcmin and are given numbers from different Durchmusterungen. These were treated in the same way as pairs with the same DM number. They are separated by double-star component letters. Many of these pairs are in the *IDS*.

Since for 10-degree δ bands in the *SAO*, most *HD* and *GC* numbers should increase monotonically, the cross index catalogue was sorted by 10-degree zones and stars whose *HD* or *GC* numbers emerged out of order were investigated and corrected where necessary. A listing of the entire cross index was then scanned manually for obvious errors.

IV. RESULTS

A total of 11,115 cross index records was corrected or appended with component and supplemental designations, but many entries contain multiple changes.

Additional files of the cross index will be created and ordered by *HD*, *GC* and DM numbers, with records omitted if the key catalog does not contain a star; the four cross reference files will then be available on magnetic tape and in a microfiche edition.

A corrected version of the *SAO* catalog is now being prepared by substituting cross-identification data currently on the *SAO* tape with the corrected and appended data from the cross index. Corrections to other *SAO* data have been inserted into the new *SAO* separately, while duplicate *SAO* entries referring to the same star have been deleted from the catalog. (Records have not actually been removed from the file, but have been flagged as duplicates and their data replaced with blank records except for *SAO* numbers. This procedure was adopted so that the number of records remains identical to that of the published catalogue, and to assure users that the stars have been deleted and not erroneously lost somewhere.)

Both the new cross index and *SAO* editions will be entensively documented, after which they will be ready for distribution to the astronomical community.

We wish to express our appreciation to Dr. W. L. Stein, who detected and supplied us with a large list of *SAO* and cross index discrepancies, and to N. Schofield, who assisted with programming and multiple-star component identifications during the early stages of this work.

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AVAILABILITY OF VARIABLE STAR CROSS-IDENTIFICATION TABLES

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The Second Edition of the General Catalogue of Variable Stars (GCVS) (Kukarkin et al. 1957) contains 21 cross-identification tables that connect the many types of names historically given to variable stars with the modern standardized designations, especially those used in the GCVS and the Catalogue of Suspected Variables (CSV).

Twenty of these tables are now available on magnetic tape from the Astronomical Data Center. The remaining one, GCVS Table 3, is not a cross-identification table but a list of Latin-letter variable star names that are not part of the Argelander system of nomenclature; this table is reproduced as Table 1 below. The other GCVS Tables are summarized in Table 2 below.

Table 1. Latin-letter Variable Star Names Not in Argelander Nomenclature (GCVS Table 3).

i	Boo	u	Her
l	Car	b	Per
B	Cas	L_2	Pup
P	Cyg	d	Ser
Q	Cyg	N	Vel
g	Her		

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Table 2. Summary of GCVS Cross-Identification Tables.

Table Number	Number of Records in File	Description
1	13078	GCVS name to others
2	358	Bayer (Greek-letter) name to GCVS or CSV
3	—	See text
4	505	Flamsteed number to GCVS or CSV
5	965	Harvard Revised Photometry (HR) = Yale Bright Star (BS) number to GCSV or CSV
6	5180	Durchmusterung number to GCVS or CSV
7	3464	Henry Draper (HD) number to GCVS or CSV
8	9218	Astronomische Nachrichten (AN) number to GCVS or CSV
9	8625	Harvard (HV) number to GCVS or CSV
10	1954	Sonneberg (S) number to GCVS or CSV
11	1226	Soviet (SVS) (Russian СПЗ) number to GCVS or CSV
12	379	Ross number to GCVS or CSV
13	178	Innes number to CGVS or CSV
14	120	Bamberg (BV) number to GCVS or CSV
15 - 18	75	Oklahoma (OV), Bologna (VB), Vatican (VV) and Tokyo (TV) numbers to GCVS or CSV respectively
19	2191	Zinner (Z or Zi) number to GCVS or CSV
20	5829	Prager (P) number to GCVS or CSV
21	809	CSV to GCVS

Reference

Kukarkin, B. V., Parenago, P. P., Efremov, Yu. N. and Kholopov, P. N. 1957, General Catalogue of Variable Stars (2nd edition; Moscow: Publishing House of Academy of Sciences of the U. S. S. R.).

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COMBINED LIST OF ASTRONOMICAL SOURCES (CLAS)

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Often, new astronomical surveys are undertaken in order to describe the sky in some spectral region that hitherto has not been thoroughly explored. The sources discovered in such surveys must be identified, whenever possible, with sources previously catalogued. This paper describes a tool, called the Combined List of Astronomical Sources (CLAS), to aid in such efforts. The CLAS consists of a dataset and an interactive computer program to access the dataset. Essential data from all the entries in twenty-five astronomical catalogues have been incorporated into the CLAS dataset. The CLAS program allows the user to query the dataset according to the values of these data. The creation of this tool was prompted by the prospect of several infrared astronomical surveys from space in the next few years. The CLAS is currently in operation at the Jet Propulsion Laboratory as part of the Infrared Astronomical Satellite (IRAS) project.

In order to prepare the data set, we have assembled current catalogues of variable stars, nebulae, pulsars, globular clusters, supernova remnants, quasars, X-ray sources, HII regions, and various types of galaxies. The twenty-five catalogues included in the current version of CLAS (version 2.1) are listed in Table I, along with the identifying numbers from the ADC Status Report, given at the end of this bulletin.

The original catalogues have been reformatted for computing efficiency. The CLAS format retains the object's position, magnitude or flux, and flags to indicate known variables and extended sources. No attempt has been made to cross-identify entries from different component catalogues; therefore, a given object may be referred to by multiple CLAS records. All records have been retained from each catalogue; the CLAS thus has as many records as all the component catalogues combined (165,433 for version 2.1).

The CLAS retrieval program enables the user to extract from the CLAS a set of records satisfying criteria specified interactively. The program prompts the user to enter the information it needs. The user may specify the set of records to be retrieved according to one or more of the following attributes:

Original catalogue
Variability
Whether source is extended
Ecliptic coordinate limits
Equatorial coordinate limits
Galactic coordinate limits
Magnitude or flux type
Magnitude or flux limits

The retrieval documentation (Hill, 1982) assumes a minimum of programming skill on the part of the user.

It is expected that the CLAS will be used not only in the analysis of IRAS data, but also in identifying discrete sources for the Cosmic Background Explorer (COBE) project, and in planning observing programs for several facilities, including the C-141 Kuiper Airborne Infrared Observatory, the Shuttle Infrared Telescope Facility (SIRTF), and ground-based long-wavelength telescopes.

REFERENCE:

Hill, Robert S., "User's Guide for CLAS Retrieval," SSD-T-1-5069-0016-83 (November 1982).

TABLE I - CATALOGUES INCLUDED IN THE COMBINED LIST OF ASTRONOMICAL SOURCES (CLAS)

Two-Micron Sky Survey (Neugebauer and Leighton 1969) (5612 records) (#2802)

General Catalogue of Variable Stars, Partial 3rd Ed. (Kukarkin et al.) (prepared by Guilbaut) (updates & revisions made at ADC) (22649 records) (#2811)

Air Force Geophysics Laboratory 4-Color Infrared (Price and Walker 1976, AFGL Report TR-76-0208) (2363 records) (#2054)

100-Micron Survey of the Galactic Plane (Hoffmann et al. 1971, Ap. J. 170, L89) (72 records) (#2056)

Dearborn Observatory Catalogue of Faint Red Stars (Lee et al. 1943, 1944, 1947) (Nagy 1979 SAS-C R-SAW-8/79-01) (44076 records) (#2068)

Interim Equatorial Infrared Catalogue (Sweeney et al. 1978, Aerospace Report TR-0078(3409-20)-1) (896 records) (#2905)

Catalogue of Early-Type Stars Whose Spectra Have Shown Emission Lines (Wackerling 1970, Mem. RAS 73, 153) (10652 records) (#3817)

Dark Nebulae (B.T. Lynds 1962 Ap. J. Suppl. 7, 1) (updated, 1791 records) (#7007)

Pulsars (Seiradakis unpublished) (149 records) (#7008)

Bright Nebulae (B.T. Lynds 1965, Ap. J. Suppl. 12, 163) (1125 records) (#7009)

Globular-Cluster Catalog (Arp 1965, Stars and Stellar Systems, vol. 5) (selected data by G. Share/NRL: ID, RA, DEC, X-ray intensity, comments) (119 records) (#7013)

Galactic Supernova Remnants Catalogue (Clark and Caswell 1976, MNRAS 174, 267) (197 + 23 records) (#7014)

Galactic Supernova Remnants Catalogue (Ilovaisky and Lequeux 1972, A&A 18, 169) (116 records) (#7015)

Fourth UHURU X-Ray Catalogue (Forman et al. 1978, Ap. J. Suppl. 38, 357) (selected data by G. Share/NRL: ID, RA, DEC, X-ray intensity, comments) (339 records) (#7018)

H II Regions (Sharpless 1959, Ap. J. Suppl. 4, 257) (313 records) (#7020)

Strasbourg Catalog of Galactic Planetary Nebulae (Acker et al. 1980, CDS Bull. 18, 84) (1446 objects) (#7724)

Morphological Catalog of Galaxies (Vorontsov-Velyaminov et al. 1962-68, Sternberg Inst. Moscow, Vol. I-IV) (29003 records) (#7825)

Uppsala General Catalogue of Galaxies (Nilson 1973, Uppsala Ann. 6) (12940 records) (#7826)

An Optical Catalogue of Radio Galaxies (G. Burbidge and Crowne, 1978, Ap. J. Suppl. 40, 583) (272 data, 130 + 130 ref. records) (#7033)

A Revised Optical Catalogue of Quasi-Stellar Objects (Hewitt and G. Burbidge 1980, Ap. J.Suppl. 43, 57) (1549 data + 748 ref + 748 sorted ref records) (#7037)

List of Globules Based on 7 Lists by Wesselius (Compiled by Wesselius 1979) (821 records) (#7903)

Seyfert Galaxies (Weedman 1977, Annu. Rev. Astron.Astrophys. 15, 69; 1978, MNRAS 184, 11p) (121 data + 230 reference records) (#7904)

Second Reference Catalogue of Bright Galaxies (de Vaucouleurs, de Vaucouleurs and Corwin 1976, U. Tex. Press, Austin) (4364 records) (#7905)

List of Positions of All X-Ray Sources with Positions Known More Accurately than those Given in the 4U or 2A Catalogues (Dolan 1979, NASA/GSFC) (266 data + 396 notes records) (#7906)

Catalogue of Galaxies and of Clusters of Galaxies, I-VI (Zwicky et al. 1961, 1963, 1965, 1966, 1968, Cal. Inst. Tech., Pasadena, 6 vol.) (Partial data for individual galaxies only) (29363 galaxy + 560 field header records) (#7911)

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UPDATES TO BIBLIOGRAPHICAL STAR INDEX SEARCH

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An on-line interactive program for searching the Bibliographical Star Index (BSI) has been available to outside users on a NASA/GSFC computer since 1980. This article updates the general description of this facility given by Nagy et al. (1981).

The BSI Search now accepts numbers from the Bonner, the Cordoba and the Cape Photographic Durchmusterungen, as well as from the Henry Draper Catalogue and the General Catalogue of Variable Stars. A utility has been added to enable the user to look up the Henry Draper (HD) numbers of bright stars having Flamsteed numbers or Bayer (Greek letter) designations.

Because the IBM S/360-91 computer on which the BSI Search has resided so far was taken out of service on September 13, 1982, the BSI Search has been installed on its replacement, an IBM 3081 computer, under TSO on the OS/MVS operating system.

The current BSI Search version number is 3.1. The user's guide for this version consists of the user's guide for Version 3.0 (Hill et al. 1982) plus a memorandum giving changes for the new computer. Both the user's guide and the memorandum are available from the Astronomical Data Center, as described in the back of this publication.

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THE BSI FROM THE USER'S VIEWPOINT

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INTRODUCTION

The explosion of astronomical publications has made a bibliographic data base arranged by object essential. The interactive computer reference search of the astronomical literature 1950-1976 (3.0) now available from NASA/GSFC (see Nagy et al. 1981) is a significant advance toward a complete availability of the astronomical literature. The ultimate goal is to have finger-tip access to the locations of the total accumulated knowledge concerning any object. The need for a data base is highlighted by the fact that Astronomy and Astrophysics Abstracts no longer indexes variable star name, as did its predecessor, Astronomisches Jahresbericht. Also, the growth of new observatories (e.g. Chile and Hawaii) has meant that their libraries do not have access to the limited editions of the older, but still valuable, observational literature. In these examples it is difficult for the astronomer to "chain back" through the papers referenced in the most recent paper on the subject. Even at its best, this method often led to incomplete knowledge while consuming the astronomer's time. Until that day arrives when the observer can sit at his terminal and retrieve the results of years of research in minutes, I present here some impressions of the current state of computerized reference searching in astronomy. Two general areas of need are outlined. The first involves improvements that can be made to the computer handling of the data base. Secondly, improvements to the contents of the data base itself are suggested.

COMPUTER SEARCHING

The Bibliographic Star Index (BSI, Cayrel et al. 1974) is a data base in which references concerning a particular star can be retrieved by searching on HD number, variable star designations, and Durchmusterung number. The latest version (3.0) covers the literature 1950-1976, with an update to be added soon. The ability to retrieve references from the literature spanning 27 years of research on the order of a few minutes is a tremendous tool for the student or researcher starting a project as well as the expert in the field who is interested in maintaining a handle on the literature.

I have used the BSI program several times on various printing terminals, including the Diablo (TM) and TI Silent 7000 (TM). The documentation provided by NASA/GSFC was easy to use and proved accurate. I found that when using the Diablo (TM) an echoing of input keystrokes occurred, a situation that could not be resolved by reference to the user's manual. A small amount of information on the operating system of the host computer (the methods of character and line deletion to erase typing errors and the system status query when output is delayed are examples) would be helpful in solving such problems. All other terminals accepted input/output without incident.

With the user's manual available, there was no instruction for reattaching should the user become disconnected. It became necessary to re-dial and repeat the entire search prior to being disconnected in order to complete the assignment. When using commercial long-distance telephone lines, disruption frequently occurred. I found that even though the program had the ability to receive multiple entries of star designations, thus searching and listing many stars, that by doing this invariably I was disconnected by line noise. It became more economical to search for one star at a time and then to re-enter program BSI.

Some cross-indexing of star designations is done in the BSI; however, it is usually indexed from Durchmusterung number to the HD number rather than vice versa and is not always consistent. An example is HD 206821 = EK Cep = BD + 69° 1191. Searching on the HD number retrieved four references with only the BD number listed as the other identification. Searching on the variable star designation recovered 10 references with only one reference in common with the HD-number search and no cross index to HD or BD number. Authors doing research on variable stars tend to report their results using only the variable star name, neglecting other catalog names. As a consequence, the dual designations were not always discovered by the BSI compilers. The BSI user should be aware of all possible designations of his stars of interest. If the star has multiple designations it would be advisable to search on each one if possible.

In this light, an adjunct program (or a re-write of program BSI itself) to recover all catalog names of a star would have an appeal to researchers in disparate fields of astronomy. The spectroscopist knows the object by its HD number; the astrometrist would favor the BD or SAO number; the photometric observer of variable stars, the GCVS entry. For example, the IUE Observatory strongly recommends exclusive use of HD number in target list preparation. Consequently, if computer reference searching is to be a complete service to the entire astronomical community, it needs to cross-correlate catalog designations. With the current interest in making cross indexes of catalog numbers (e.g. the HD-SAO-DM Cross Index of Nagy and Mead 1978, the SAO-IRC cross index of Snowden and Wells at Kitt Peak, etc.) the cross correlations of star designations are available for merging with the BSI references. If, upon entering one designation, all other designations are recovered and printed, it would facilitate basic research. For example, HD 222287 is HR 8966 (m_v = 6.74, so it is not obvious that it would be in the Bright Star Catalogue). With the wealth of critically reviewed information about this star from the BSC, it would not always be necessary to consult the original literature.

As the program exists at present, the user can not specify a search strategy whereby a range of publication dates or journal name is examined. The printed listing contains all references available in the 1950-1976 range in all journals scanned. In many cases only a specific span of years (or the last few years) is needed. Also, when the star designation is entered and the user responds that his list is complete, he is committed to receiving all references. For bright stars this can be undesirable. For example, I searched on HD 149757 and the program retrieved 215 references. After the first line of output informing me of the number of references I would have preferred to stop the output. A pause in the program execution and a prompt asking if the reference list is desired would be a helpful revision.

A more readable format for the reference list output is desirable. By indenting the second line of the reference such that the author becomes prominent in the listing will make the output easier to read. The string processing necessary to prevent the breaking up of text words at the end of a print line would improve readability. A line feed between references would ease scanning of a long list of references.

IMPROVEMENTS TO THE BSI

Stars observed and identified in different wavelength regions pose a particular problem for the data base. The detection of sources at non-visual wavelengths prior to their optical identification may have been missed by the BSI compilers. As an example, cosmic X-rays were discovered during the early rocket launches in the 1960's but their positions were so poorly determined that optical identifications were impossible. The discovery of Cyg X-1 in 1964 and its optical identification in 1971 provides an example. Searching on BD $+34^{\circ}$ 3815 or HDE 226868 will not recover the X-ray discovery paper or the X-ray papers preceding optical identification (although it was well observed in the optical regions with six papers listed for the years prior to 1971).

In addition to the omissions generated by observations at new wavelengths, a major desideratum is an extension of the BSI into the past. This inclusion of pre-1950 literature may be equivalent to merging the BSI with the Bidelman Bibliography (Parsons et al. 1980). This merger would represent a major undertaking, since the two data bases differ substantially in format and information content. The combination of the two, made accessible through an interactive search code, would however result in a powerful research tool.

SUMMARY

The BSI and the current GSFC service for computer reference searching is a valuable tool for the astronomer. With the addition of star-designation cross-indexing, improved output format, and a provision for search strategy specifications, it could become a more useful instrument. In order to gain more completeness, an update and expansion of the data base itself (most notably the retrospective addition of pre-1950 and pre-optical identification papers) is needed.

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The DO-HD and HD-DO Cross Indices

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The Dearborn Observatory (DO) Catalogue of Faint Red Stars (Lee et al. 1943, 1944 and 1947) is the result of a survey of faint red stars conducted at that observatory from about the mid-1930s to about the mid-1940s. The catalogue was published in three parts:

Part	Declination Range (degrees)	DO Number Range
1A	-4.5 to +13.5	1 - 8151
1B	+13.5 to +40.5	8141 - 22680
1C	+40.5 to +90	22681 - 44076

This catalogue has been made machine-readable (Nagy 1979; Nagy and Hill 1980) with the following data:

1. Dearborn number (sequential 1-44076).
2. Right ascension (epoch 1900, hours, minutes and tenths of minutes).
3. Declination (epoch 1900, degrees and minutes of arc).
4. Magnitude - obtained through comparison on red-sensitive emulsion with the International Polar sequence: "... should be fairly reliable to 0.2 magnitude". If a star were known to be variable by the compilers of the catalogue, the magnitude is given as "99.9" in the machine-readable version. (The quote is from the preface to the published catalogue.)
5. Dearborn spectral type obtained from objective-prism plates with red-sensitive emulsion.
6. Henry Draper (HD) spectral type, which is given for 5764 (13%) of the stars. The introduction to the published version of the catalogue does not define the criteria for correlation of Dearborn and Henry Draper entries.

The incorporation of the HD spectral type in the DO but not the HD numbers provided a link between the two catalogues. This document describes how the link was established to create the DO-HD and the HD-DO cross indices presented herein.

Correlation Process

Since both catalogues are in machine-readable form, a program was written to perform two passes of the DO data with respect to the HD. Each pass was based on an acceptable equatorial position range of values. The selection was based solely on the agreement in equatorial coordinates between the DO and the HD source. The HD spectral type as given in the DO and as given in the HD were compared after positional agreement. If all criteria are met then the match is considered final. If the spectral types did not match, the record was flagged and this was investigated manually. If a star failed both passes, it was placed in another file which would be processed again with a larger spatial window. In all, four runs of the program were required to complete the cross index.

Preparation of the Data Sets

Since we were only interested in the subset of the DO which ontained a HD spectral type, these data were selected (5764 entries) from the full catalogue. Also, the southern declination limit of the DO is nominally -4.5 degrees so that a subset of the HD catalogue north of -5.0 degrees was prepared. No effort to include the HD extension in this process was made.

The DO subset records were then sorted by increasing right ascension. Remember the full DO was prepared in three parts and within each part the right ascension ranges from 0 to 23 hours.

Selection Criteria

The comparison passes of the two data sets were done with increasingly larger spatial windows with a defined positional tolerance in right ascension and declination. The values of the positional tolerances for each pass are given as follows:

	Window	
Pass	Right Ascension (minutes)	Declination (arc minutes)
Ia	0.15	1.5
Ib	0.25	2.5
IIa	0.15	3.5
IIb	0.25	3.5
IIIa	0.25 sec δ	1.5
IIIb	0.45 sec δ	2.5
IVa	0.35 sec δ	3.5
IVb	0.55 sec δ	5.5

The above selection criteria are in agreement with those used by Grasdalen and Gaustad (1971) in their manual correlation of the Two-Micron Sky Survey (Neugebauer and Leighton 1969) with the DO. Their criteria were that positions in the two catalogues agree within three arc minutes in declination and 0.2 sec δ minutes in right ascension.

There were 125 stars which failed to meet any of the above criteria using the program. This was caused by a variety of reasons; e.g., an object too close to the search area of the previous object or an error in the machine-readable version of one or both of the catalogues. These 125 stars and another 106 cases of positional correlation but lack of spectral correlation were all investigated manually. All of the 5764 DO sources have been correlated with an HD star but the above investigations have led to some special notes as given in Table 1. These should be read with care since some of the correlations may be questionable. A sample page of the DO-HD Cross Index is given in Table 2.

HD-DO Cross Index

This part of the cross index was prepared by simply sorting the DO-HD cross index by the HD number. It should be noted that there were 118 cases of one HD star correlated with two DO sources. In another case, one HD star (HD 205998) was correlated with three DO sources (20695, 20691 and 39864). This cross index has the HD number on the second (and

third) record blanked out so that duplicate records are easily identified in the table. A sample page of the HD-DO Cross Index is given in Table 3.

Summary

These cross indices were prepared as an aid in the preparation of a supplemental infrared data base. Users should consult the notes in Table 1 for some possible questionable correlations. The correlation of the subset of the DO catalogue with the HD catalogue makes it possible through the use of the HD-DM- SAO Cross Index (Nagy and Mead 1978) to provide more precise coordinates for these sources. The two cross indices described in this document are machine-readable and available from the Astronomical Data Center at GSFC. A hardcopy version of these indices are available from the author.

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Neugebauer, G. and Leighton, R. B. (1969). Two-Micron Sky Survey, NASA SP-3047.

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Table 1. DO-HD Cross Index Remarks (SP = Spectral Type).

DO Number	Remark
595, 9989	Probably the same DO object, since the two appear in two different analyses of the survey. Both are correlated with the same HD source (HD 22031).
807	The HD SP given in the DO would correspond to identification with HD 29118 but the correspondence to HD 29106 (SP K5) is probably better.
929	The HD SP given in the DO is K5 but the most reasonable match with the HD is with HD 31798 (SP given as Pec).
964	The HD SP given in DO is N but probably should read NB.
1017	The HD SP given in DO is K5 but the best correspondence by position is with HD 33866 (SP G0).
2285	The HD SP given in DO is K0 but the best correspondence by position is with HD 61297 (SP K5).
3201	The HD SP given in DO is K0 but the best correspondence by position is with HD 106878 (SP K5).
3839	The correspondence of this source with the HD in right ascension and spectral type correlates it with HD 141377. However, the HD declination is -0° 42' but the published DO lists the DO declination at $+0^{\circ}$ 43'. Either the correlation with the HD is incorrect or the published declination of the DO source is incorrect.
6541	The HD SP given in DO is OA which corresponds to SP given in the HD for HD 191899. However, published errata (Hoffleit 1976) updates this spectral type to K7.
7648	The HD SP given in DO is K0 but the best correspondence by position is with HD 208529 (SP K5).
7885	In order to match by spectral type this DO source would have to be correlated with HD 215429. However, the difference in declination would be 12 arc minutes which is much greater than the typical difference of a few arc minutes. The cross identification table matches the DO source with HD 215386 (SP F5) which is 0.3 minutes from the DO source in right ascension.
20887	The HD SP given in DO is K2 but the best correspondence by position is with HD 207371 (SP K0).
22063	The HD SP given in DO is K5 but the best correspondence by position is with HD 218741 (SP K2).

Table 1. DO-HD Cross Index Remarks (SP = Spectral Type).

DO Number	Remark
22328	The HD SP given in DO is KO but the best correspondence by position is with HD 222031 (SP K2). Note that the spectral type of HD 222030 is K0 which may explain the possible discrepancy.
23051	The HD SP given in DO is N but probably should read NB.
23631	The correspondence by position and spectral type is with HD 3689. However, a better correlation is with HD 3681 (SP K0).
26017	The HD SP given in the DO is K2 but the best correspondence by position is with HD 16256 (SP K0).
29608	The HD SP given in DO is K0 but the best correspondence by position is with HD 37923 (SP K5). Note that the spectral type of HD 37922 is K0 which may explain the possible discrepancy.
32101	The HD SP given in DO is K0 but the best correspondence by position is with HD 66871 (SP G5).
36182	The HD SP given in DO is K2 but the best correspondence by position is with HD 169243 (SP K0).
36923	The HD SP given in DO is G but the best correspondence by position is with HD 179240 (SP G5).
37398	The HD SP given in DO is K0 but the best correspondence by position is with HD 184332 (SP K). The DO probably should read K.
37852	The HD SP given in DO is MA but the best correspondence by position is with HD 188438 (SP MB).
38107	There were no HD stars anywhere in the near vicinity of the published position for this DO entry. If the right ascension, the HD spectral type and the approximate magnitude are all considered then HD 191500 fits. However, the published declination of this DO source is +53° 42' but the declination for HD 191500 is +43° 46'. Obviously, this correspondence is questionable since not all of the published parameters agree with any HD star.
39187	The HD SP given in the DO is K0 but the best correspondence by position is with HD 200830 (SP A0).
39415	The HD SP given in DO is K0 which was probably identified with HD 203136. However, a probable better correspondence is with HD 203137 (SP K5).

Table 1. DO-HD Cross Index Remarks (SP = Spectral Type).

DO Number	Remark
41864	The HD SP given in DO is K2 which was probably identified with HD 215410. However, a probable better correspondence is with HD 215345 (SP K0).
42038	The HD SP given in DO is F8 but the best correspondence by position is with HD 216161 (SP K0).
42916	The HD SP given in DO is K but the best correspondence by position is with HD 220104 (SP K2).
42989	The HD SP given in DO is K but the best correspondence by position is with HD 220474 (SP K2).
43026	The HD SP given in DO is K but the best correspondence by position is with HD 220652 (SP K5).
43273	The HD SP given in DO is K but the best correspondence by position is with HD 221697 (SP K0). The DO probably should read K0.

Table 2. DO-HD Cross Index (Sample Page).

DO #	HD #	DO #	HD #	DO #	HD #
11	223	232	9204	511	19461
14	252	237	9314	513	19619
16	293	239	9371	516	19697
20	295	240	9427	517	19723
30	545	242	9473	522	19884
31	544	243	9502	527	20100
39	701	253	9882	529	20168
44	785	255	9929	531	20196
48	853	267	10155	533	20204
52	1030	271	10380	548	20646
53	1063	275	10420	564	20963
56	1122	282	10609	570	21143
57	1146	283	10652	594	21976
59	1228	285	10685	595	22031
60	1255	287	10698	598	22061
62	1283	289	10776	615	22420
63	1292	294	10835	618	22545
64	1394	295	10854	623	22724
75	1585	296	10867	625	22768
76	1586	310	11225	626	22754
78	1673	312	11272	627	22782
87	2005	315	11327	628	22806
88	2115	316	11350	630	22978
90	2293	325	11640	635	23262
92	2359	336	11871	636	23315
93	2473	350	12233	638	23362
94	2623	355	12479	641	23467
95	2637	357	12505	651	23688
98	3469	360	12537	657	24244
99	3500	374	12701	670	25000
101	3629	376	12773	671	25001
111	4165	377	12764	672	25012
113	4246	383	12872	675	25162
115	4525	386	12942	682	25477
116	4563	388	13042	690	25605
120	4677	389	13072	693	25647
123	4821	408	13598	701	25826
126	5112	414	13826	704	26163
127	5121	418	13955	717	26448
131	5542	422	14204	718	26472
132	5760	423	14244	724	26608
133	5820	427	14362	727	26692
135	5859	430	14366	728	26691
137	5919	431	14455	730	26768
138	5989	433	14514	732	26845
144	6242	435	14634	735	26963
148	6331	438	14652	745	27270
154	6372	440	14857	750	27385
157	6739	444	14920	754	27498
158	6761	446	15105	756	27549
164	6837	449	15285	764	27800
166	6849	450	15275	775	28066
172	7274	460	16063	776	28070
178	7421	475	16971	779	28159
180	7492	480	17559	782	28260
186	7671	485	17791	787	28487
187	7746	487	17986	796	28705
189	7763	492	18345	807	29106
191	8019	495	18462	818	29480
196	8214	496	18700	823	29539
205	8543	497	18760	835	29787
211	8725	499	18973	847	30102
217	8827	501	19043	858	30346
222	9035	502	19105	866	30519
230	9203	507	19258	870	30634

Table 3. HD-DO Cross Index (Sample Page).

HD #	DO #
38	22698
71	22717
100	8162
111	81644
185	22715
223	11
252	14
295	16
295	20
414	81955
492	228144
507	228177
509	22813
544	31
545	30
551	228311
555	228488
559	82099
598	82213
613	82144
640	82200
701	39
711	82228
775	228961
784	82366
785	43
794	228995
795	82388
809	229095
826	229188
853	48
915	229466
928	82551
948	229577
951	82577
963	82599
972	229548
1013	82655
1030	52
1033	229744
1059	82700
1063	53
1075	827222
1109	230008
1122	56
1131	82800
1146	57
1166	230400
1228	59
1240	230366
1255	60
1283	62
1292	63
1306	230511
1326	230700
1361	83077
1364	83066
1394	64
1417	230811
1426	230888
1519	231112
1526	231144
1546	231188
1585	75
1586	76

HD #	DO #
1613	23129
1672	83233
1673	78
1710	23207
	23135
1716	83330
1754	83337
1831	83341
1843	23199
1845	23208
1846	23217
1967	83349
1955	83350
2005	67
2025	83356
2102	23276
2115	88
2190	83365
2265	83369
2291	23310
2293	90
2342	83375
2359	92
2411	83381
2423	83382
2473	94
2486	23365
2561	83387
2602	83392
2623	94
2637	95
2738	23433
2778	84033
2824	23434
2841	84044
2880	84047
2908	23479
2911	84048
3022	23490
3140	23502
3147	23517
3162	23525
3223	23550
3241	23564
3332	23564
3345	23555
3368	23561
3400	23575
3430	23572
	23595
3446	23577
3489	84088
3488	23578
3500	99
3529	23616
3545	84433
3572	23623
3629	101
3638	23629
3648	84439
3649	84440
3681	23631
3701	84441
3923	23662
4004	23708

HD #	DO #
4012	23726
4056	23709
4143	23718
	8472
4165	111
4174	84473
4181	84474
4230	23740
4246	113
4279	84482
4387	84491
4408	84494
4441	23768
4475	23765
4525	115
4565	116
4601	23783
4605	85505
4647	23796
4669	85513
4677	120
4698	85518
4718	85522
4779	85525
4788	85525
	85526
4811	23819
4817	23820
4821	123
4828	23816
4832	85534
4869	85538
4895	85539
4949	23844
4960	23849
4962	85541
4993	23858
5000	23856
5007	85547
5033	23863
5051	85548
5092	85555
5093	85554
5111	23872
5112	126
5121	127
5196	85568
5223	85561
5245	85560
5258	23889
5273	23892
5286	85569
5316	85566
5329	85572
	85570
5343	23902
5432	85575
5460	23900
5462	85579
5477	85578
5482	85581
5492	23913
5542	131
5576	85589
5581	23929

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NEW AND REVISED CATALOGUES AVAILABLE FROM THE ASTRONOMICAL DATA CENTER

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Astronomical catalogues and data sets recently received and/or modified are described briefly. The catalogue numbers are those given in the Status Report in this *ADC Bulletin*.

1741 *Lowell Proper Motion Survey 8991 Stars with m > 8, μ > 0".26/year in the Northern Hemisphere* (Giclas, Burnham and Thomas 1971, Lowell Obs. Flagstaff, AZ)

The catalogue has been reformatted from multiple records for stars having photoelectric data to single records for all stars. Some corrections indicated in the published catalogue were made, as were several general changes to make the machine version conform more closely to the published catalogue. A descriptive document has been prepared. Work is now proceeding on computerizing all notes in the published catalogue.

1743 *First Santiago-Pulkovo Fundamental Stars Catalogue* (Anguita *et al.* 1975, Publ. Dep. Astronomy, Univ. of Chile 2 (No. 6) 181)

The catalogue files have been restructured with unused space removed; some corrections have been made and a document has been prepared.

1913 *Lick Jupiter-Voyager Reference Star Catalogue* (Klemola, Morabito, and Taraji 1978, Lick Obs.)

1914 *Lick Saturn-Voyager Reference Star Catalogue* (Klemola, Taraji, and Ocampo 1979, Lick Obs.)

These catalogues were kindly supplied by Dr. Klemola. Format modifications were made and resorting by right ascension was done. Documents are available for these catalogues.

1915 *Yale Zone Catalogue*, δ -60° to -70° (Fallon 1981)

This catalogue was supplied in binary form by Dr. Fallon. Work is being undertaken to reformat the data and convert them to character-coded format.

1918 *Photographic Catalogue, Sydney Zone -48° to -54°, Right Ascensions and Declinations of 20457 Stars* (Eichhorn *et al.*, unpublished)

This catalogue was received on magnetic tape from Dr. Eichhorn. Nothing has been done with the data yet because Dr. Eichhorn is in the process of preparing a description of the catalogue.

1919 *Third Santiago-Pulkovo Fundamental Stars Catalogue, a Catalogue in R. A. of 671 Fundamental Bright Stars of the Zone +40 to -90* (Loyola and Shishkina 1972, *Publ. Dep. Astronomy, Univ. of Chile*, 2, No. 5, 159).

The machine-readable catalogue was prepared at the ADC. A descriptive document and a microfiche version have been prepared.

1920 *Yale Catalogue of Trigonometric Stellar Parallaxes* (Jenkins 1952, 1963, Yale Univ. Obs) with Supplement Data (USNO 1982)

The magnetic tape version was kindly supplied by Dr. P. K. Seidelmann of the USNO. Corrections found by Dr. W. F. van Altena, Dr. D. Hoffleit and at the ADC have been incorporated and a descriptive document is available.

1921 *Jet Propulsion Laboratory Planetary and Lunar Ephemerides for the Years 1960 to 2000, Mean Equator and Equinox B1950* (DE118/LE62, E. M. Standish, JPL)

1922 *Jet Propulsion Laboratory Planetary and Lunar Ephemerides for the Years 1960 to 2000, Mean Equator and Equinox J2000* (DE200/LE200, Standish and Seidelmann 1981, *Bull. AAS* 4, 874).

These data sets contain Chebyshev polynomial expansion data for the computation of ephemerides by interpolation. They are stored on 6250 bpi, IBM binary VBS formatted tape. Software is available for computing ephemerides in rectangular coordinates for desired input times.

2758 *Vilnius Photometric Catalogue, Published Measurements and Weighted Means* (North 1980, *Astron. Astrophys. Suppl.* 41, 395).

Catalogue received from the CDS, Strasbourg, in 1982 January. The tape files are unchanged except for the deletion of a few unnecessary text records from the data files where they would have interfered with processing. A descriptive document is available.

2074 *Photometric Data for the Nearby Stars* (Hauck, B. and Mermilliod, M. 1981, *CDS. Inform. Bull.* No. 21, p. 35).

Catalogue received from the CDS, Strasbourg, in 1982 January. A few minor editing corrections were made to the first file; otherwise, the tape is identical to that distributed from the CDS. A descriptive document is available for this tape.

2913 *CAO 2 Filter Photometry of 531 Stars of Diverse Types* (Code, A. D., Holm, A. V., and Bottemiller, R. L. 1980, *Astrophys. J. Suppl.* 43, 501).

The tape was kindly supplied by the Space Astronomy Laboratory, University of Wisconsin, in 1981 August. The data were reformatted to single logical records per object and various data fields rewritten to a computer-compatible and homogeneous form. Colons appended to published data were added to the machine version.

2914 *Ultraviolet Star Catalogue* (prepared at University College London, see Carnochan, D. 1979, *CDS Inform. Bull.* No. 17, p. 78).

The catalogue was kindly supplied by D. Carnochan in 1982 July. The tape contains a descriptive file with detailed format, but no further examination has been made yet.

2915 *Catalogue of uvby Data for a Map of the Local Interstellar Reddening within 300 Parsecs* (Perry, C. L. and Johnston, L. 1982, *Astrophys. J.*, in press)

The catalogue was kindly supplied by the authors in 1981 October. Visual double stars in the file containing page and sequential-number designations from the *Index Catalogue of Visual Double Stars (IDS)* were converted to standard coordinate codes used with the IDS. No other changes have been made.

2916 *A Catalogue of Homogeneous Photometry of Bright Stars on the DDO System* (McClure, R. D. and Forrester, W. 1981, *Pub. Dominion Astrophys. Obs.* 15, 439)

The catalogue was kindly supplied by R. D. McClure in 1982 January. The data records were reformatted to eliminate unused space and Durchmusterung numbers were added to the file. HD numbers for multiple stars were encoded in the standard way and flag bytes were created for error information. A descriptive format is available.

2917 *Catalogue of Galactic O-Type Stars* (Garmany, C. D., Conti, P. S., and Chiosi, C. 1982, *Astrophys. J.*, in press).

The catalogue was supplied by C. D. Garmany in 1982 April. The data were reformatted in order to make the star designations uniform, to record the photometric data in standard form, and to homogenize various other data. Three duplicate entries were removed after careful checking and notification of the first author. A descriptive document is available.

2918 *Catalogue of Infrared Observations* (Gezari, D. Y., Schmitz, M. and Mead, J. M. 1982, NASA TM 83819)

The catalogue and documentation were supplied by the authors in 1982 July. This catalogue supersedes the Merged Infrared Catalogue (2071).

2919 *Catalogue of Intrinsic Colours of Stars in the Ultraviolet* (Carnochan, D. J. 1982, *CDS Inform Bull.* No. 22, p. 75).

The catalogue was supplied by D. Carnochan in 1982 July. The tape contains a descriptive file with a detailed format. Further work has not been done yet.

3715 *Luminous Stars in the Northern Milky Way* (Hardorp *et al.* 1959-1965, Hamburg-Bergedorf, Vol. I-VI)

The catalogue was received from the CDS, Strasbourg. The machine-readable version was modified extensively to more closely match the published catalogue, to make the format uniform, and to remove non-numerical characters from certain data fields. The data were converted from BCD coding to EBCDIC (or ASCII), the logical record length was shortened to discard unused bytes. An additional data file, sorted by increasing right ascension and decreasing declination, was added as a second file, while the remarks published in Volumes II, IV and VI were computerized and added as a third file. A descriptive document is available.

3904 *The Sixth Catalogue of Galactic Wolf-Rayet Stars: Their Past and Present* (van der Hucht, K. A., Conti, P. S., Lundström, I. and Stenholm, B. 1981 Space Science Reviews 28, no. 3)

See announcement of availability elsewhere in this bulletin.

3918 *A Deep Objective-Prism Survey for Large Magellanic Cloud Members* (Sanduleak, N. 1969, *Contr. Cerro Tololo Inter-American Obs.*, No. 89).

This catalogue was transcribed, punched, verified, and checked at the Astronomical Data Center. A document describing the tape file and containing the notes is available.

3919 *Catalogue, Spectrum and Magnitude Data Bank of B_e, B_p and B_{pe} Stars* (Page, A. A. 1982)

The catalogue was kindly supplied on magnetic tape by A. A. Page. It is a catalogue of B peculiar and emission stars containing extensive cross identifications and basic data such as spectral type(s), magnitudes, colors (*B-V*) and remarks.

4916 to 4930 Tables 2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, and 21 from *General Catalogue of Variable Stars*, 2nd Edition (Kukarkin, B. V., Parenago, P. P. Efremov, Yu. N., and Kholopov, P. N. 1957, Publishing House of the Academy of Sciences of the USSR, Moscow)

See announcement of availability elsewhere in this bulletin.

5704 *Catalogue of Stars within 25 Parsecs of the Sun* (Woolley, R., Epps, E. A., Penston, M. J. and Pocock, S. B. 1970, Roy. Obs. Ann., No. 5).

The machine-readable catalogue was received from the CDS, Strasbourg. The data were reformatted to condense the 160-byte records to the current 135 bytes and to convert the old 026 character code to 029. A descriptive document is available.

5706 *Catalogue of Kinematic Data for O-B5 Stars* (Rubin, V., Burley, J., Kiasatpoor, A., Klock, B., Pease, G., Rutscheidt, E. and Smith C. 1962 *Astron. J.* 67, 491).

Initially, this catalogue was received from the CDS. The entries for Tables I and IV of the original published catalogue were combined. The spectral types and source references from the original published catalogue were added. Some data fields were reformatted.

5907 The *Bright Star Catalogue*, 4th Revised Edition (Hoffleit, D. with the collaboration of Jaschek, C. 1982, Yale University Observatory).

The catalogue was kindly supplied on magnetic tape by D. Hoffleit in 1982 March. An additional tape containing remarks files was supplied in April. The original data tape contained 18 files consisting of left and right pages for groups of 1000 stars. The files were combined into a single data file with one logical record per star. Corrections found after publication of the catalogue were made and the supplementary remarks were merged into the remarks and data file. Documentation has been prepared.

6906 *Faint Blue Objects at High Galactic Latitude* (Warnock, A. III and Usher, P. D. 1982, *Astron. Data Center Bull.* 1, No. 3)

The catalogue was supplied on magnetic tape by A. Warnock III in 1982 April. The only changes made were the blanking out of B magnitudes when they were absent (they were 0.0 originally) and shortening of the record length from 132 bytes to 118 bytes, since bytes 119-132 were never used.

7827 *Revised Optical Catalogue of Quasi-Stellar Objects* (Hewitt, A. and Burbidge, G. 1980, *Astrophys. J. Suppl.* 43, 57)

The machine-readable version of this catalogue was received from Adelaide Hewitt in August 1980. This version incorporated all of the errata identified by the authors to date. Extensive modifications have been made to the format of the machine-readable version, which as received consisted of five types of card images for each entry, followed by the references in the same file. Each entry now consists of a single 525-byte record with a consistent format, and the references have been put into separate files, one sorted numerically and another sorted alphabetically.

7902 *Optical Catalogue of Radio Galaxies* (Burbidge, G. and Crowne, A. H. 1979, *Astrophys. J. Suppl.* 40, 583).

The machine-readable version of this catalogue was received from one of the authors (A. Hewitt, formerly A. H. Crowne) in the summer of 1981. Extensive modifications to the format have been made, similar to those described for 7827 above. Also, the coordinate designation was computed and added to each record, since it was not originally given on the tape for the majority of records. One missing record has been reconstructed from the published catalogue. Counts of spectral lines were added to each record. Some data are present in the machine-readable version but not in the original published version, particularly a few photometric color values and references.

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ASTRONOMICAL DATA CENTER (ADC)
ANNUAL REPORT FOR 1982

J. M. Mead
Laboratory for Astronomy and Solar Physics/GSFC

W. H. Warren Jr.
National Space Science Data Center/GSFC

The present report covers activities of the Astronomical Data Center, NASA Goddard Space Flight Center, for the calendar year 1982.

I. PERSONNEL

J. M. Mead (Laboratory for Astronomy and Solar Physics, LASP), W. H. Warren Jr. (National Space Science Data Center/World Data Center A for Rockets and Satellites, NSSDC), T. A. Nagy and R. S. Hill (Systems and Applied Sciences Corporation), and W. T. Sheridan (NSSDC) comprised the ADC staff. T. A. Nagy and W. T. Sheridan left the ADC during the year.

II. ACTIVITIES

Two new machine-readable versions of previously published catalogs: *A Deep Objective-Prism Survey for Large Magellanic Cloud Members* (Sanduleak 1969, Catalog 7038) and *Third Santiago-Pulkovo Fundamental Stars, A Catalogue in RA of 671 Fundamental Bright Stars of the Zone +40° to -90°* (Loyola and Shishkina 1972, Catalog 1078) were created by direct-to-disk keypunching. Approximately 1700 records of notes to the *Lowell Proper Motion Survey 8991 Stars with m > 8, PM > 0".26 per Year in the Northern Hemisphere* (Giclas, Burnham and Thomas 1971, Catalog 1079) were committed to machine-readable form. Supplement 2 of the *Catalogue of Photometric Sequences* (Argue and Miller 1976) was punched and Supplement 3 is in preparation in collaboration with the authors. The original catalog and supplements will be combined to produce a new comprehensive machine-readable catalog. An updated and corrected version of the *Yale Catalogue of Trigonometric Parallaxes* (Jenkins 1952, 1963), containing the supplement stars, was received from the U.S. Naval Observatory and prepared for distribution. A new *Yale Zone Catalogue*, -60° to -70° was received from F. W. Fallon and a collaborative effort initiated with him and E. Dorrit Hoffleit to prepare the catalog for publication in the *Yale Transactions*.

All zones of the machine-readable *Cordoba Durchmusterung* were distributed both internally and externally for proofreading. About half of the zones have been returned and corrections are being recorded for editing purposes.

A new version of the *SAO-HD-DM-GC Cross Index* (Catalog 4004), containing approximately 9000 changes, was produced as part of the work on a new version of the SAO Catalog. Work on the SAO Catalog itself has nearly been completed.

A system of automated retrieval of astronomical catalogs from a set of master tapes was developed. The system allows automatic access to specified catalogs and preparation of requesters' tapes to specifications with a minimum of interactive terminal input. The preparation of magnetic-tape file records for requesters' tapes was also automated.

The ADC *Status Report on Machine-Readable Catalogues* was converted to upper and lower case and revised to include additional information about each catalog listed.

Tests were successfully run on using an optical character recognition machine to computerize printed catalogs to create magnetic tapes directly from printed pages. A project to computerize the Luyten NLTT catalog of 15985 stars in collaboration with the Space Telescope Science Institute was begun.

A Combined List of Astronomical Sources (CLAS) has been prepared (see paper in this Bulletin) by combining selected data from 25 catalogs which may contain candidates for identification in the survey by the *Infrared Astronomy Satellite (IRAS)*, launched in late January 1983. This data set has been installed on-line at the Jet Propulsion Laboratory, where the *IRAS* survey is underway.

A bibliographical index of astronomical objects observed by the *International Ultraviolet Explorer (IUE)*, based on a search of six journals covering 1978 to 1981, was completed.

III. COMPUTING FACILITIES

The IBM 360 Computers (/75 and /91) of the Goddard Space Flight Center Science and Applications Computing Center were replaced with an IBM 3081 Model D system. Conversion of all software to the new virtual machine MVS operating system was successfully effected. The new computer, with its larger foreground capabilities, allows interactive editing of all but the largest astronomical catalogs, and many ADC utilities have been developed to take advantage of these capabilities.

IV. CATALOGS

The addition of 93 astronomical catalogs to the ADC collection during 1982 brought the total number of catalogs to 360. Microfiche versions of eight additional catalogs were produced. A total of 34 catalogs is now on microfiche, with an additional 17 catalogs on microfilm only. Descriptive documents were produced for 33 additional catalogs; 125 catalogs now have completed descriptive documents.

V. REQUEST ACTIVITY

A total of 403 requests was received by the ADC in 1982. Materials distributed included 257 catalogs on magnetic tape, 17 printed catalogs, 76 microfiche catalogs, 123 copies of documents (not including those distributed with machine-readable catalogs) and 95 Status Reports. Forty-four copies of previously distributed ADC Bulletins were disseminated, while 77 requests for information were processed.

VI. DATA EXCHANGE

A new data set was created and software written to prepare reports on data exchange with the other centers of machine-readable astronomical data. The report shows that 27 catalogs were received from the CDS, Strasbourg, while 42 catalogs were sent to the CDS. Six catalogs were received from and ten sent to the Soviet Astronomical Data Center, while one catalog was received from and seven catalogs sent to the U. S. Naval Observatory; one catalog was received from the Japanese Astronomical Data Center at the Kanazawa Institute of Technology.

ADC Bull. (July 1983) 1, 243-275

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES

ASTRONOMICAL DATA CENTER

NASA-GODDARD SPACE FLIGHT CENTER

J. M. MEAD, W. H. WARREN JR., T. A. NAGY

28 MAY 1983

Catalogues are grouped and numbered in terms of the Strasbourg Stellar Data Center's numbering system where applicable. Additional bibliographical information can be found in the CDS catalogue list.

Catalogues numbered in 700s have been received from the CDS, but modified, updated with corrections, or supplemented with additional data. If the CDS assigns a number to the GSFC version or decides to distribute it in place of its own, then the CDS number will be reassigned to the GSFC version.

Catalogues numbered in 800s are distinct from the CDS versions in that they originate from independent sources and/or they have been redone or extensively modified.

Catalogues numbered in 900s have not yet or are not expected to be assigned numbers by the Strasbourg Data Center.

Status Codes for Catalogues:

A - Available for distribution
B - Basically checked out on computer, but documentation not yet completed or some questions remain
C - Catalogue on hand, but not yet checked out by computer
D - Catalogue in preparation, revision, or update (temporarily unavailable)
E - Catalogue has been requested, but not yet received
F - Available in microfiche version
G - Available in both microfiche and microfilm versions
M - Available in microfilm version
R - Catalogue on hand, but we are not authorized to distribute
T - Full documentation available

Status codes for magnetic tape, microform, and documentation are given in first, second and third columns, repectively.

NOTE: The machine-readable catalogues on this list have been obtained from many different sources and, in some cases, have been modified (reformatted, reblocked, corrections added, etc.) at GSFC. In no case, however, has a catalogue been changed internally with regard to data content. Individual sources are identified in the documentation pertaining to each catalogue.

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STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
28 MAY 1983

I. ASTROMETRIC DATA:

1801 - Smithsonian Astrophysical Observatory Star Catalog (with HD and GC numbers added - character version) (Haramundanis 1966) (258997 records) — D M T

1003 - Yale Zone Catalogues (YZ) (Trans. Yale Astron. Obs. 11-27,30-31) (206760 records) — B

1004 - Cape Photographic Catalogue (CPC) (Ann. Cape Obs., Vol. 17-22) (68466 records) — B

1005 - Proper Motions of Stars in the Zone Catalogue of 20843 Stars 1900 (H. Spencer Jones and J. Jackson 1936, HMSO, London) (20847 records) — B

1006 - Catalogue of 20554 Faint Stars in the Astrographic Zone -40° to -52° for the Equinox of 1900.0 (CP) (H. Spencer Jones and J. Jackson 1939, HMSO, London) (20554 records) — B

1808 - General Catalogue of 33342 Stars for the Epoch 1950.0 (GC) (Boss 1937, Carnegie Inst. of Washington) (33342 records) — A M T

1009 - Geschichte des Fixsternhimmels (Zones 0° to +50°) (observed positions not included) (169000 records) — E

1810 - Yale Catalogue of Trigonometric Parallaxes (TP) (Jenkins 1952, 1963, Yale Univ. Obs.) (6079 records) — A G

1011 - Catalogue of Proper Motions of 8790 Stars with Reference to Galaxies (Klemola et al. 1971, Publ. Lick Obs. XXII, Part II) (12492 records) — B

1012 - Stern-Katalog fur die Zone von -6° bis -10° Sudlicher Deklination fur das Aequinoktium 1890, Erste und Zweite Abtheilung (Herz 1906,1907, Math. Abh. nicht zur Akad. gehor. Gelehrter, Berlin. 1906. I.; 1907. I.) (3310 + 6941 records) — B F

1013 - Catalog of 5,268 Standard Stars Based on the Normal System N30 (H. R. Morgan 1952, Astron. Papers Amer. Ephemeris 13, Part III) (N30) (5268 records) (superseded by 1080) — B

1014 - Proper Motions of 1160 Late-Type Stars (Fogh Olson 1970, A&A Suppl. 2, 69) (1176 records) — C

1015 - Fourth Fundamental Katalog and Supplement (Fricke and Kopff 1963, Veroff. Astron. Rechen-Inst., Heidelberg, No. 10,11) (8543 records) — B

1016 - Katalog von 3356 Schwachen Sternen fur das Aequinoktium 1950 (Zones -5° to +89°) (3356 records) (Larink 1955, Hamburg-Bergedorf Verlag der Sternwarte) — C

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
28 MAY 1983

I. ASTROMETRIC DATA:

1021 - Carte du Ciel Catalogue (Lacroute and Valbousquet 1974, CDS Bull. 6, 38) (AC) (Oxford, Toulouse, Bordeaux, Algiers zones) C

1022 - Carte du Ciel Catalogue (Lacroute and Valbousquet 1974, CDS Bull. 6, 38) (AC) (Paris zone) C

1023 - Catalogue of Proper Motions for 437 A Stars (Fogh Olson 1970, A&A Suppl. 1, 189) (458 records) C

1026 - Catalogue de 8803 Etoiles entre 31° et 40° Declinaison Nord (Prager 1923, Veroff. Berlin-Babelsberg 4) E

1028 - Bonn 10: Katalog von 10663 Sternen (Kustner 1908, Veroff. der Konigl. Sternwarte zu Bonn, No. 10) (10400 records) C

1031 - Bucharest Catalogue: Catalogue KSZ d'Etoiles Faibles pour 1950.0 (1972) Zones -11° to +11° (3940 records) B

1032 - Greenwich Catalog of Stars For 1910.0 (London, H. M. Stationery Office 1920) Zones +24° to +32° (12368 records) E

1033 - First Greenwich Catalog of Stars for 1925.0 (London 1924) (2643 records) C

1034 - Second Greenwich Catalog of Stars for 1925.0 (2111 Fundamental Stars) (London 1935) Zones +32° to +64° (10587 Stars, 12698 records) C

1035 - Second Nine-Year Catalog of Stars for 1900: Astrographic Reference Stars (London 1909) (10127 records) C

1036 - Catalogue de 964 Etoiles, Zones +5° to +15° (Fayet, Cercle Meridien Ann. Bur. Long. XIII) (800 records) C

1037 - Paris 50: Catalogue of 3997 Stars (unpublished) Zones +33° to +35° (2002 records) C

1038 - Tokyo Mitaka Catalogue of Equatorial Stars 1950.0 (TME) (Tuzi 1962, Ann. Tokyo Astron. Obs. (2) 8, 1) (4135 records) C

1041 - Lowell Proper Motion Survey 8991 Stars with m > 8, PM > 0.26"/Year in the Northern Hemisphere (Giclas, Burnham and Thomas 1971, Lowell Obs., Flagstaff, AZ) (10384 records) B

1043 - First Santiago-Pulkovo Fundamental Stars Catalogue (SFP 1) (1126 records) (Anguita et al. 1975, Publ. Dep. Astronomy, Univ. of Chile, 2 (No. 6) 181. B

1044 - Second Catalogue of Fundamental Stars Santiago-Pulkovo (SFP-2) (326 + 280 + 62 records) (unpublished) B

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
28 MAY 1983

I. ASTROMETRIC DATA:

1049 - Catalogue Meridien de Strasbourg 1972 (Melchior and Dejaiffe, unpublished) (2832 records) — C

1054 - A Catalogue of 1849 Stars with Proper Motions Exceeding 0.5" Annually (Luyten 1955, Lund Press, Minneapolis) — B

1055 - 3eme Catalogue de Toulouse, Zones +3° to +12° (Paloque 1937, Toulouse Ann. 13) (10074 records) — C

1057 - Catalogue de 14263 Etoiles: Catalogue D'Abbadia (Hendaye 1915) Zones +16° to +24° (14218 records) — C

1059 - Catalogue of Proper Motions of 12590 Faint Stars in the +25° TO -20° Declination Zone (Gorel 1972, Trudy Glav. Astron. Obs. Pulkovo, Ser. 2, 80, 5) (6295 records) — C

1860 - Data on Trigonometric Parallaxes which have been used in the Yale Catalogue (Right-hand pages of Trig. Par. Cat.) (Jenkins 1963, Yale Univ. Obs.) (10215 records) — B

1861 - AGK3 Catalogue (from Heidelberg; 1975, Hamburg-Bergedorf; see also Warren 1978, CDS Bull. 15, 116) (183145 records) (see also 1069) — A F T

1862 - Perth 70, Positions of 24900 Stars (P70) (Hog and von der Heide 1976, Abh. der Hamburger Sternwarte IX) (24978 records) (see also 1917) — A T

1068 - Positions and Proper Motions of 2027 Stars in the Vicinity of Alpha Persei (Fresneau 1980, CDS Bull. 18, 81; Astron. J. 85, 66) (2027 records) — E

1069 - AGK3 Catalogue (from Heidelberg; 1975, Hamburg-Bergedorf; see also Warren 1978, CDS Bull. 15, 116) (see also 1861) (183145 records sorted by right ascension) — A T

1870 - AGK3R Catalogue: Observational Catalogue of 21499 Northern Reference Stars (see Scott and Smith 1967, Conf. on Photographic Astrometric Technique, p. 181, Ed. H. Eichhorn, U. South Florida, Tampa) (21499 records) — B

1071 - Catalog of Supplemental Stars to the Bonner Durchmusterung (Warren and Kress 1980, ADC Bull. 1, 19) (838 records) — A T

1872 - AGK3R Catalogue: Mean Positions and Proper Motions of for 20194 AGK3R Stars (prepared by T.E. Corbin, USNO) (see Corbin, T.E. 1978, IAU Colloq. 48, 505) (20194 records) — B

1873 - Catalogue of 20457 Star Positions Obtained from Photography in the Declination Zone -48° to -54° (1950) (H. Eichhorn, W.D. Googe, C.F. Lukac and J.K. Murphy, 1983, Astron. J. 88, 546) (20457 records) — B

1074 - Quatrieme Catalogue Meridien de l'Observatoire de Besancon (Creze et al. 1982, Astron. Astrophys. Suppl. 50, 147) (953 stars; 670 + 283 records) — B

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
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I. ASTROMETRIC DATA:

1075 -	Second Cape Catalogue for 1950.0 (1968, Ann. Cape Obs. 23) Declination < -20° (6763 stars + 417 circumpolar stars)	B
1076 -	Lick Saturn-Voyager Reference Star Catalogue (Klemola, Taraji, Ocampo 1979, Lick Observatory) (4555 records)	A T
1077 -	Lick Jupiter-Voyager Reference Star Catalogue (Klemola, Morabito, Taraji 1978, Lick Observatory) (4986 records)	A T
1078 -	Third Santiago-Pulkovo Fundamental Stars Catalogue (SFF 3), A Catalogue in R.A. of 671 Fundamental Bright Stars of the Zone +40° to -90° (Loyola and Shishkina 1972, Publ. Dep. Astronomy, Univ. of Chile, 2 (No. 5) 159) (671 records)	A F T
1079 -	Lowell Proper Motion Survey 8991 Stars with m > 8, PM > 0.26"/Year in the Northern Hemisphere (Giclas, Burnham and Thomas 1971, Lowell Obs., Flagstaff, AZ). (8989 records)	A T
1080 -	Catalog of 5,268 Standard Stars Based on the Normal System N30 (H. R. Morgan 1952, Astron. Papers Amer. Ephemeris 13, Part III) (N30) (5268 data + 277 remarks records)	A F T
1081 -	Yale Catalogue of Trigonometric Parallaxes (Jenkins 1952, 1963, Yale Univ. Obs.) with corrections and Supplement data added) (USNO 1982) (6675 records) (supersedes 1810)	A T
1082 -	First Santiago-Pulkovo Fundamental Stars Catalogue (SFF 1) (1043 + 82 records) (Anquita et al. 1975, Publ. Dep. Astronomy, Univ. of Chile, 2 (No. 6) 181.	A T
1083 -	Bonner Durchmusterung (BD) zones +60° to +89° (punched at CDS, Strasbourg 1983)	B
1084 -	Bonner Durchmusterung (BD) zones +14°, +26° to +55°, +58°, +59° (punched at Observatoire de Nice 1983)	B
1901 -	Cordoba Durchmusterung (CD) (Thome 1892-1932, Resultados del Obs. Nac. Argentino 16,17,21) (613951 records)	D G
1902 -	Accurate Positions of 502 Stars in Region of Pleiades (Eichhorn et al. 1970, Mem. RAS 73, 125) (502 records)	A T
1903 -	Catalogue of Stars in Region of Hyades Cluster (Warren and Dunham 1978)	D
1904 -	Smithsonian Astrophysical Observatory Star Catalog (Haramundanis 1966) (with HD and GC numbers added) (binary version) (SAO-Binary)	A T
1906 -	Bonner Durchmusterung (BD) Zones - 1° to +19°	D G

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
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I. ASTROMETRIC DATA:

1907 - Bonner Durchmusterung (BD) Zones +20° to +40° G

1908 - Bonner Durchmusterung (BD) Zones +41° to +89° G

1909 - Cape Photographic Durchmusterung (CPD) D G
(Gill and Kapteyn 1895-1900, Cape Ann. 3-5)
(only zones -18° to -32°, -35° machine readable)

1910 - Southern Durchmusterung (BD South) Zones - 2° to -23° G
(Schonfeld 1886, Astron. Beob. 8, Part IV)

1911 - Jet Propulsion Laboratory Long Ephemeris Tape of Planetary and Lunar Ephemerides for the Years 1410 BC to 3003 AD (DE102, 6 files, VBS Format Binary) A
(Newhall 1976, Jet Propulsion Lab)

1915 - Yale Zone Catalogue, Zone -60° to -70° (Fallon 1981) B
(14598 + 14598 records)

1916 - Perth 70, Individual Observations of 24900 Stars C
(Hog and von der Heide 1976, unpublished)
(162117 records)

1917 - Perth 70, Positions of 24978 Stars (P70) A T
(Hog and von der Heide 1976, Abh. der Hamburger Sternwarte IX) (1862 ordered by DM number)
(24978 records) (see also 1862)

1921 - Jet Propulsion Laboratory Planetary and Lunar Ephemerides for the Years 1960 to 2000, Mean Equator and Equinox B1950 (DE118/LE62, VBS Format Binary) A
(E. M. Standish, JPL)

1922 - Jet Propulsion Laboratory Planetary and Lunar Ephemerides for the Years 1960 to 2000, Mean Equator and Equinox J2000 (DE200/LE200, VBS Format Binary) A
(Standish and Seidelmann 1981, Bull. AAS 4, 874)

1923 - The J Catalog of Reduced Astrographic Catalogue Data for Galactic Clusters and Other Selected Zodiacal Regions (Dunham and Herald 1982, see Dunham, D.W. 1978, Occultation Newsletter 1, 138). B
(6420 records)

1924 - Santiago 67 Catalogue, Catalogue of 7610 Stars, Declination Zone -25° to -45°, Equinox 1950.0 B
(G. Carrasco and P. Loyola 1981, Publ. Dep. Astronomy, Univ. of Chile 4)

1925 - New Less than Two Tenths Catalogue (NLTT) (Luyten, W. J. 1979, 1980, University of Minnesota) (computerized through joint ADC and Space Telescope Science Institute effort with financial support of STScI) D F
(58340 stars)

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
28 MAY 1983

II. PHOTOMETRIC DATA:

2001 - Catalogue of Stars Measured in the Geneva Observatory Photometric System (Rufener 1976, A&A Suppl. 26, 275) (4795 records) (superseded by 2072) — B

2802 - Two-Micron Sky Survey (TMSS) (Neugebauer and Leighton 1969) (5612 records) — A R T

2703 - A Catalogue of uvby, Beta Measurements: A Collection of Published Data; A Catalogue of Weighted Means (Hauck and Mermilliod 1975, A&A Suppl. 22, 239) (superseded by 2057) — A M

2004 - Photoelectric Catalogue: Magnitudes and Colors of Stars in the UBV and UcBV Systems (Ochsenbein 1974, A&A Suppl. 15, 215) (34807 records) (improved version of 2910 below) (UBVS) — A M

2005 - UBV Photometry of Bright Stars (Johnson et al. 1966, Commun. LPL 4, 99, Table 9) — B

2006 - Celescope Catalogue of Ultraviolet Magnitudes (Davis et al. 1973, SAO Spec. Report 350) (5761 records) — C R

2707 - UBVRIJKLMNH Photoelectric Photometric Catalogue (Mcrel and Magnenat 1978, A&A Suppl. 34, 477) (5943 data records + 88 ref. records) — A R T

2008 - Catalogue of UVBGRI Measurements: Catalogue of Published Data; Catalogue of Weighted Means (Nicollier and Hauck 1978, A&A Suppl. 31, 437) (1702 + 1297 records) — B

2010 - General Catalogue of Variable Stars, 2nd Ed. (GCVS) (Kukarkin et al. 1958, (17945 records) (superseded by 2811 below) — B M

2811 - General Catalogue of Variable Stars, Partial 3rd Ed. (Kukarkin et al.) (prepared by Guillaut) (GCVS-3) (22649 records) (updates & revisions made at ADC) — A T

2014 - VBIUW Photoelectric Photometric Catalogue, System of Walraven (published data and homogeneous means) (Python 1979, A&A Suppl. 38, 463) (3132 + 2687 records) — C

2015 - Catalogue of Photometric Measurements in the UBVr 20 System (published data and weighted means) (Magnenat 1973, CDS Internal Report No. 6) (418 + 366 records) — C

2016 - Catalogue des Mesures Photometriques dans le Systeme de l'Observatoire de Vilnius: Catalogue of Individual Measures; Catalogue of Averages; References (see 2758) (Magnenat 1974, CDS Internal Report No. 8) (3105 records) — C

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
28 MAY 1983

II. PHOTOMETRIC DATA:

2017 - Catalogue des Mesures Photometriques dans le Systeme de David Dunlap Observatory: Catalogue of Individual Measures; Catalogue of Averages (Magnenat 1974, CDS Internal Report No. 9) (1884 records) C

2018 - Catalogue des Mesures Photometriques dans le Systeme (102, 65, 62) de Eggen: Catalogue of Individual Measures; Catalogue of Averages (Magnenat 1974, CDS Internal Report No. 7) (1585 records) C

2019 - Theoretical Colours for F and G Dwarfs (Bell 1971, MNRAS 154, 343) C

2020 - The Spatial Distribution of Young Stars in Vela (positional, photoelectric UBV, reddening, distances data, [illegible] records, 358 Stars) (Denoyelle 1977, A&A Suppl. 27, 343) C

2021 - Narrow-Band Photometry of Late-Type Stars (Haggkvist and Oja 1970, A&A Suppl. 1, 199) (629 Stars) C

2022 - H-Alpha Photometry of Late-Type Stars II. F and G Dwarfs South of the Equator (Peat 1966, MNRAS 131, 467) (172 records) C

2024 - H-Alpha Photometry of Late-Type Stars I. F-, G- and K-Type Stars North of the Equator (Peat 1964, MNRAS 128, 435) (594 records) C

2025 - Photometry of Orange-Red Ca I Triplet in Late-Type Stars. Table I (Peat 1964, MNRAS 128, 475) (296 records) C

2026 - Catalogue of Early-Type Stars Measured in a Narrow-Band Photometric System (Morguleff and Gerbaldi 1975, A&A Suppl. 19, 389) (1482 records) C

2027 - Catalogue of Photoelectric Photometric Measurements in the UcBV System (published data and weighted means) (Nicolet 1975, A&A Suppl. 22, 239) (8080 + 7146 records) B

2029 - Catalogue of UBV Photometry and MK Spectral Types in Open Clusters (Mermilliod 1976, A&A Suppl. 24, 159; CDS Bull. 11, 16) (13358 records) B

2032 - O Stars Catalogue, 3rd Edition (Gcy 1976, A&A Suppl. 26, 273) (3118 records, 951 entries) (superseded by 2076) B

2033 - uvby, Beta Photometry for Bright O- to G0-Type Stars South of Declination +10° (2828 records) (Gronbech and Olsen 1976, 1977, A&A Suppl. 25, 213; 27, 443) B

2034 - Polarization Catalogue (Mathewson,Ford/Klare,Neckel and Krautter combined, see CDS Bull. 14, 115) (7503 records) B R

2035 - A General Catalogue of UBV Photoelectric Photometry (Mermilliod and Nicolet 1977, A&A Suppl. 29, 259) (MN-UBV) (73091 records) A M

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
28 MAY 1983
II. PHOTOMETRIC DATA:

2036 - Catalogue of Individual UBV and uvby-Beta Observations in the Region of the Orion OB 1 Association (Warren and Hesser 1977, Ap.J. Suppl. 34, 115) (1576 records, 106 UBV Stars, 508 uvby-Beta Stars) B

2037 - Catalogue of UBV HR Diagrams of Globular Clusters (Philip et al. 1976, Dudley Obs. Report No. 11) (40824 records) B

2038 - Catalogue Miniphote (13 data files, 2 ref. files) (Hagnenat 1975, CDS Bull. 8, 20) B

2039 - Catalogue of Stars Photometrically Measured (Hagnenat 1976, CDS Bull. 11, 17) (about 60800 Stars) B

2040 - Photoelectric Measures of Hydrogen Line Absorption in Early-Type Stars (Bappu, Chandra, Sanval and Sinvhal 1962, MNRAS 123, 521) (177 records) C

2041 - Photoelectric Measurements of the 4200-A CN Band and the G Band in G8-K5 Spectra (Griffin and Redman 1960, MNRAS 120, 287) (712 records) C

2042 - K-line Photometry of A Stars (Henry 1969, Ap.J. Suppl. 18, 47) (292 records, 146 entries) C

2043 - K-line Photometry of Southern A Stars, Table I: Summary of Data on Southern A Stars (Henry and Hesser 1971, Ap. J. Suppl. 23, 421) (738 records, 369 entries) E

2044 - K-line Photometry of Stars in Population I Clusters, Tables 3 to 6 (Pleiades, IC 2391, IC 2602, Hyades) (Hesser and Henry 1971, Ap.J. Suppl. 23, 453) (112 entries) C

2045 - Strong Cyanogen Stars, Table 2: Photometric Data (Janes and McClure 1971, Ap.J. 165, 561) (185 records) C

2046 - A Photometric Investigation of the Strong Cyanogen Stars, Table 1: Bright Calibration Stars; Table 4: Strong Cyanogan Stars (McClure 1970, AJ 75, 41) (183 records) C

2047 - Scanner Abundance Studies I. An Investigation of Super-Metallicity in Late-Type Evolved Stars, Tables 5, 6, 7 (Spinrad and Taylor 1969, Ap.J. 157, 1279) (229 entries) C

2048 - A Reference List for the UBV System (Nicolet 1976, CDS Bull. 11, 20) (13425 records) C

2049 - Catalogue of Am Stars with Known Spectral Types (Hauck 1973, A&A Suppl. 10, 385) (418 entries, 645 records) B

2050 - Photometric Standard Stars, Table II: Magnitudes and Colours of Bright Southern Stars; Table IV: Magnitudes and Colours of Stars in Equatorial Zone (Cousins 1971, Royal Obs. Ann. 7) (900 records) C

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
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II. PHOTOMETRIC DATA:

2051 - Photoelectric Photometric Catalogue of Homogeneous Measurements in the UBV System (NUBV) (Nicolet 1978, A&A Suppl. 34, 1) (58845 records) — A

2052 - 13-Color Photometry of 1380 Bright Stars (Johnson and Mitchell 1975, Rev. Mex. Astron. Astrof. 1, 299) (1380 records) — B

2053 - A Catalogue of 10-Micron Celestial Objects (10MU) (Hall 1974, Aerospace Corp. Report SAMSO-TR-74-212) (647 records) — A T

2054 - Air Force Geophysics Laboratory 4-Color Infrared (Price and Walker 1976, AFGL Report TR-76-0208) (2363 records) — A M T

2055 - Flare Stars Gershberg (FS) (Shakhovskaya 1971, IAU Colloq. 15, Kl. Veroff. Bamberg 9, 138) (53 records) — A T

2056 - 100-Micron Survey of the Galactic Plane (100MU) (Hoffmann, Frederick and Emery 1971, Ap.J. 170, L89) (72 records) — A T

2057 - A Catalogue of uvby, Beta Measurements: A Collection of Published Data; A Catalogue of Weighted Means (Hauck and Mermilliod 1980, A&A Suppl. 40, 1) (31161 obs + 19849 means) (update of 2703) — E R

2758 - Vilnius Photometric Catalogue, Published Measurements and Weighted Means (North 1980, see CDS Bull. 19, 92; A & A Suppl. 41, 395) (2095 measures, 1879 stars) — A T

2859 - Catalogue of Stellar Ultraviolet Fluxes. Results of the SKYSCAN Experiment and TD-1 (Thompson et al. 1978, Science Research Council, UK) (31215 records) — A T

2061 - Catalogue of Stellar Diameters (Fracassini and Pasinetti 1979, CDS Bull. 16, 49; 1981, A & A Suppl. 45, 145) (6313 records, 4266 Stars) — B

2062 - Catalog of Extinction Data (Neckel,Klare and Sarcander 1980, CDS Bull. 19, 61) (12547 records) — B

2063 - A Compilation of Balmer Lines Photometric Data (J.-C. Mermilliod, M. Mermilliod 1980, CDS Bull. 19, 65) (15 files, 16143 records) — B

2064 - UBV Data 1976-79 (J.-C. Mermilliod 1980, CDS Bull. 19, 63) (1 title, 1620 obs, 125 ref, 140 numb sys records) — B

2065 - Five-Color Photometry of Blue Stars in and between the Magellanic Clouds (Wamsteker 1981, Astron. Astrophys. Suppl. 43, 127) (1128 records) — B

2066 - A Catalogue of Observations in H-Alpha (Ducati 1981, A & A Suppl. 45, 119) (2299 Stars) (4095 obs + 2299 means) — B

STATUS REPORT ON MACHINE-READABLE ASTRONOMICAL CATALOGUES
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II. PHOTOMETRIC DATA:

2067 - OAO 2 Ultraviolet Photometry: An Atlas of Stellar Spectra (Code and Meade 1978, Ap.J. Suppl. 39, 195; Meade and Code 1980, Ap.J. Suppl. 42, 283) (3 files: 2132,1188,340 records; 164,132,34 stars) — A T

2068 - Dearborn Observatory Catalogue of Faint Red Stars (DO) (Lee, O.J., Baldwin, R.J. and Hamlin, D.W. 1943; Lee, C.J. and Bartlett, T.J. 1944; Lee, O.J., Gore, G.D. and Bartlett, T.J. 1947, Ann. Dearborn Obs. 5, Parts 1A, 1B and 1C) (44076 records) — A T

2069 - Catalogue of Stars Suspected of Variability: Table 1 (Kukarkin et al. 1951,1965, Astron. Council Acad. Sci. USSR) (CSV-T1) (8904 records) (superseded by 2079) — A G T

2070 - Catalogue of Stars Suspected of Variability: Table 2 (Kukarkin et al. 1951,1965, Astron. Council Acad. Sci. USSR) (CSV-T2) (3137 records) (superseded by 2079) — A T

2071 - Merged Infrared Catalogue (MIRC) (Schmitz, Brown, Mead and Nagy 1978, NASA TM 79683) (11201 records) (superseded by 6020) — A

2072 - Third Catalogue of Stars Measured in the Geneva Photometric System (Rufener 1981, Astron. Astrophys. Suppl., 45, 207) (14633 Stars) (update of 2001) (14633 means, 19025 obs, 745 notes records) — B

2073 - Narrow-Band Photometry (Alexander, J.B., Royal Greenwich Obs.; see MNRAS 194, 403, 1981 for system description) (1257 records) — E

2074 - Photometric Data for the Nearby Stars (Hauck and M. Mermilliod 1981, CDS Bull. 21, 35) (34 descr, 1768 data, 37 refs, 50 systems records) — A T

2075 - Homogeneous Catalogue of Red and Infrared Magnitudes in the Photoelectric Photometric System of Kron (Jasniewicz, G. 1982, Astron. Astrophys. Suppl. 49, 99) (68 description + 11989 data records) — B

2076 - O Stars Catalogue, 4th Edition (Goy, G. 1980, Astron. Astrophys. Suppl. 42, 91) supersedes 2032 (4665 records, 971 stars) — B

2077 - Non-Solar X-Ray Measurements (XRY) (Arens and Rothschild 1975, NASA/GSFC X-661-75-230) (1301 records) — A T

2078 - uvby-Beta Photometry of 398 Members of Visual Multiple Stellar Systems (Olsen, E.H. 1982, Astron. Astrophys. Suppl. 48, 165) (398 stars) — B

2079 - Catalogue of Suspected Variable Stars (Kukarkin et al. 1981: Moscow) (39748 records) — B

2080 - A Catalogue of Homogeneous Photometry of Bright Stars on the DDO System (McClure and Forrester 1981, Publ. Dominion Astrophys. Obs. 15, 439) (2196 Stars) — A F T

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II. PHOTOMETRIC DATA:

2081 - Faint Blue Objects at High Galactic Latitude, Cat. of Objects in SA28, 29, 57 (Warnock and Usher 1982, ADC Bull. 1, No. 3, to be published) (2363 records) — A T

2082 - Catalog of Galactic O-Type Stars (Garmany, Conti and Chiosi 1982, Astrophys. J. 263, 777) (768 records) — A T

2083 - OAO 2 Ultraviolet Filter Photometry for 531 Stars (Code, Holm, Bottemiller 1980, Ap.J. Suppl. 43, 501) (531 records) — A F T

2084 - 13-Color Photometry of 1380 Bright Stars (Johnson and Mitchell 1975, Rev. Mex. Astron. Astrof. 1, 299) (format of spectral types modified and updated at ADC, 1981) (1380 records) — A F T

2085 - Absolute Calibration of Stellar Spectrophotometry (H.L. Johnson 1980, Rev. Mex. Astron. Astrof. 5, 25) (16 stars, 182 records) — A T

2086 - Supplement to the Ultraviolet Bright Star Spectrophotometric Catalogue (Macau-Hercot, D., Jamar, C., Monfils, A., Thompson, L., Houziaux, L. and Wilson, R. 1978, ESA SR-28) (435 records) — B

2901 - Stromgren-Perry uvby Colors (unpublished 1965) (SP) (1217 records) — A G T

2905 - Interim Equatorial Infrared Catalogue (EIC 1) (Sweeney, Heinsheimer, Yates, Maran, Lesh, Nagy 1978, Aerospace Report TR-0078(3409-20)-1) (896 records) — A T

2907 - Interim Equatorial Infrared Catalogue (EIC 2) (Sweeney, Heinsheimer, Yates, Maran, Lesh, Nagy 1979) (1278 records) — D

2909 - UBVRIJKL Photometry of Bright Stars (Johnson et al.) (formerly 2007; superseded by present 2007) — B

2910 - Photoelectric Catalogue: Magnitudes and Colors of Stars in the UBV and UcBV Systems (Blanco et al. 1968) — B

2914 - Ultraviolet Star Catalogue (prepared at University College London, see Carnochan 1979, CDS Bull. 17, 78) (contains TD1-S2/68 Ultraviolet Fluxes with other basic information added: MK, UBV, uvby, v sin i, etc.) (167 description + 31290 data records) — A P

2915 - Catalogue of uvby-Beta Data for a Map of the Local Interstellar Reddening within 300 Parsecs (Perry and Johnston 1982, Ap.J. Suppl. 50, 451) (3458 records) — B

2919 - Catalogue of Intrinsic Colours of Stars in the Ultraviolet (Carnochan 1982, CDS Bull. 22, 75; MNRAS 201, 1139) (209 description + 671 data records) — A

2920 - Catalogue of Galactic O Stars (Cruz-Gonzalez, Recillas-Cruz, Costero, Peimbert and Torres-Peimbert 1974, Rev. Mex. Astron. Astrof. 1, 211) (664 stars) — B

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II. PHOTOMETRIC DATA:

2921 - Revised S201 Catalog of Far-Ultraviolet Objects (T.L. Page, G.R. Carruthers and H.M. Heckathorn 1982, NRL Report 8487) A

2922 - Vilnius Photoelectric Catalogue (Z. Zdanavicius, E. Jodinskiene, A. Kazlauskas, V. Straizys and A. Bartkevicius 1983, Vilnius Astronomical Observatory) C

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III. SPECTROSCOPIC DATA:

3801 - Henry Draper Catalogue and Extension (HD) D M
(Cannon and Pickering 1918-1936, Harv. Ann. 91-100)
(225300 + 46872 records, 1 file)

3002 - Preliminary General Catalogue of Early-Type Emission Stars (Bertiau and McCarthy 1969, Ric. Astron. 7, 523) B
(3216 records)

3003 - Revised Catalogue of Stellar Rotational Velocities B
(Uesugi 1979, U. Tokyo) (6253 records)
(see 3063 for update)

3703 - Catalogue of Rotational Velocities of the Stars (UFRV) A M T
(Uesugi and Fukuda 1970, Contrib. Inst. Astrophys. Kwasan Obs. Kyoto 33, 205) (3941 records) (superseded by 3003)

3004 - Bibliography of Stellar Radial Velocities B R
(Abt and Biggs 1972, Kitt Peak National Obs., Tucson)
(44133 records) (reformatted at CDS, Strasbourg)

3804 - Bibliography of Stellar Radial Velocities D
(Abt and Biggs 1972, Kitt Peak National Obs., Tucson)
(44133 records) (original KPNO format)

3005 - Catalogue of Faint OB Stars between Carina and Centaurus C
(Lynga 1968, Medd. Lund, Ser. I, No. 238) (285 records)

3006 - Studies of the Milky Way from Centaurus to Norma III. C
OB Stars (Lynga 1964, Medd. Lund, Ser. II, No. 141)
(484 records)

3007 - A Survey of Faint OB Stars in Carina C
(Graham and Lynga 1965, Mem. Mt. Stromlo Obs. 18)
(454 records)

3008 - Luminous Stars in the Southern Milky Way (LSS) B
(Stephenson and Sanduleak 1971, Publ. Warner & Swasey Obs. 1, No. 1) (5132 records)

3009 - F8-G2 Stars in a North Galactic Pole Region C
(Upgren 1963, AJ 68, 194) (1127 records)

3010 - G5 and Later Stars in a North Galactic Pole Region E
(Upgren 1962, AJ 67, 37) (4027 records)

3011 - F2 and Earlier Stars in S.A. 28, 54, 106, 107 C
(Upgren and Staron 1969, Ap.J. 157, 327) (454 records)

3012 - F5 and Later Stars in S.A. 28, 54, 106, 107 C
(Upgren and Staron 1970, Ap.J. Suppl. 19, 367)
(2068 records)

3013 - Vyssotsky's Catalogues 1950.0 (Vyssotsky et al. 1943, B
1946, 1952, 1956, 1958, Ap.J. 97, 381; 104, 234; 116, 117;
AJ 61, 201; 63, 211) (915 records)

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III. SPECTROSCOPIC DATA:

3714 - A Finding List of Stars F2 and Earlier in a North Galactic Pole Region (Slettebak and Stock 1959, Hamburger Sternwarte 5, No. 5) (365 BD + 236 non-BD + 135 notes records) — A T

3015 - Luminous Stars in the Northern Milky Way (LSN) (Hardorp et al. 1959-1965, Hamburg-Bergedorf, Vol. I-VI) (7389 records) (improved version under 3076) — B R

3016 - Seventh Catalogue of the Orbital Elements of Spectroscopic Binary Systems (BAT7) (Batten, Fletcher and Mann 1978, Publ. Dom. Astrophys. Obs. 15, 121) (978 Systems, 4884 + 3872 records) — B

3817 - Catalogue of Early-Type Stars Whose Spectra Have Shown Emission Lines (Wackerling 1970, Mem. RAS 73, 153) (WEL) (10652 records) — A T

3818 - Catalogue of Stellar Spectra Classified in the Morgan-Keenan System (C. Jaschek,Conde,de Sierra 1964, Publ. La Plata Obs.) (20849 records) — A G T

3019 - MK Classification Extension (Kennedy 1978, Mt. Stromlo Obs.) (30551 data + 351 ref. records) (superseded by 3062) — B F

3021 - General Catalogue of Stellar Radial Velocities (WRV) (Wilson 1953, Carnegie Inst. Washingtcn Publ. 601) (15106 records) — A G T

3022 - Rotation of Evolving A and F Stars (Danziger and Faber 1972, A&A 18, 428) (580 records) — B

3023 - MK Classification for OB Stars (Lesh 1968, Ap.J. Suppl. 17, 371) (458 records) — B

3025 - Abundances of Sodium, Magnesium and Calcium in K-Type Giant Stars. Table I (Peat and Pemberton 1968, MNRAS 140, 21) (311 records) — E

3026 - Abundances of Sodium, Magnesium and Calcium in K-Type Giant Stars. Table II (Peat and Pemberton 1968, MNRAS 140, 21) (85 records) — C

3027 - Scanner Abundance Studies II. Late G and K Dwarfs in the Solar Neighborhood, Table 5: Raw Data (Taylor 1970, Ap.J. Suppl. 22, 177) (849 records, 283 Stars) — C

3028 - Scanner Abundance Studies II. Late G and K Dwarfs in the Solar Neighborhood, Table 5: Blocking Fractions (Taylor 1970, Ap.J. Suppl. 22, 177) (309 records) — B

3829 - A Catalogue of H Gamma Measures of B. M. Petrie (HGAMMA) (Crampton, Leir and Younger 1973, Publ. Dom. Astrophys. Obs. 14, 151) (1171 records) — A G

3730 - A Catalogue of Stellar Rotational Velocities (Bernacca and Perinctto 1970-1973, Contrib. Oss. Asiago No. 239, 250, 294) (3099 records) — A G T

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III. SPECTROSCOPIC DATA:

3031 - Michigan Catalogue of 2-Dimensional Spectral Types for the HD Stars, Vol. 1 (Zones -89° to -53°) (MHD1) (Houk and A. Cowley 1975, U. Michigan) (36382 data + 4636 notes records) — A T

3032 - Determination of [Fe/H] Values (Morel et al. 1975, IAU Symp. 72) (896 records) (superseded by III/54/) — B

3033 - A Spectral Survey of the Southern Milky Way I (Sundman, Loden and Nordstrom 1974, A&A Suppl. 16, 445) (2951 records) — B

3034 - A Spectral Survey of the Southern Milky Way II (Nordstrom 1975, A&A Suppl. 21, 193) (562 records) — B

3035 - A Spectral Survey of the Southern Milky Way III (Loden, L. O. et al. 1976, A&A Suppl. 23, 283) (about 10000 records) — B

3736 - A General Catalogue of Cool Carbon Stars (Stephenson 1973, Publ. Warner & Swasey Obs. 1, No. 4) (3219 records) — A T

3037 - The Merrill-Burwell Catalogues of Stars Exhibiting Bright Hydrogen Lines (Merrill and Burwell 1933, 1948, 1949, 1950, Ap.J. 78, 87; 98, 153; 110, 387; 112, 72) (1607 records) — E

3038 - Bibliographic Catalog of Radial Velocities (Barbier, Marseilles Obs.) (Supplement to 3004) (7173 records) — B R

3739 - Ultraviolet Bright Star Spectrophotometric Catalogue (Jamar et al. 1976, ESA SR-27) (1356 entries) — A T

3040 - A Uniform Edition of the Stockholm Southern Milky Way Survey (contains catalogs 3033,3034,3035) (Andersen 1977, A&A Suppl. 29, 257) — C

3041 - Identification List of Lines in Stellar Spectra (Finding List from Moore 1959, NBS Tech. Note 36 "A Multiplet Table of Astrophysical Interest") tape version by L. Gratton and F. Querci (14634 records) — B

3042 - Catalogue of Selected Spectral Types in the MK System (M. Jaschek 1978, CDS Bull. 15, 121) (MKS) (30361 data + 1029 ref. records) — A F

3043 - Catalogue of Luminous Stars in the Southern Milky Way (Stephenson and Sanduleak 1971, Publ. Warner & Swasey Obs. 1, No. 1; updated version of 3008 by Bischoff 1978, CDS Bull. 14, 15) (5132 records) — B

3044 - An Atlas of Stellar Spectra (Johnson 1977, Rev. Mex. Astron. Astrof. 2, 71) — C

3045 - Infrared Spectra for 32 Stars (Johnson and Mendez 1970, AJ 75, 785) — C

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III. SPECTROSCOPIC DATA:

3046 - Catalogue of Ap and Am Stars (Bertaud and Floquet 1974, A&A Suppl. 16, 71; Eidelman and MacConnell 1973, AJ 78 687) B

3747 - Catalogue of Stellar Radial Velocities (Evans 1967, IAU Symp. 30, 57) (0 - 20 hours RA only) (7823 records) B R

3848 - Spectrophotometric Scans (BSP) (Breger 1976, Ap.J. Suppl. 32, 7) (937 records) A T

3049 - White Dwarfs (Luyten 1970, Univ. of Minnesota Press) (prepared by G. Share, selected data only) (3035 records) (complete data contained in 3905 below) A T

3050 - Southern Milky Way Spectral Survey for Stars Earlier than A5 (Geyer 1978, IAU Symp. 50, 82) (30810 records) C

3851 - Michigan Catalogue of 2-Dimensional Spectral Types for the HD Stars, Vol. 2 (Zones -52° to -40°) (Houk 1978, U. Michigan) (30400 + 4950 records) A T

3052 - MK Spectral Classifications, 3rd General Catalogue (Buscombe 1977, Northwestern Univ.) (36339 + 177 records) B

3053 - Catalog of Stars Classified from the Ultraviolet Line Features of the S2/68 Experiment (Cucchiaro, Jaschek and Jaschek 1979, CDS Bull. 17, 93) (1908 stars) B

3054 - A Catalog of [Fe/H] Dererminations (Cayrel de Strobel et al. 1980, A&A Suppl. 41, 405) (superseded by 3061) (628 stars, 1109 determinations) B

3055 - Radial Velocities in Open Clusters (Mermilliod, J.C. 1979, CDS Bull. 16, 2) B

3056 - Second Catalog of Am Stars with Known Spectral Types (Curchod and Rauck 1979, A&A Suppl. 38, 449) (867 data, 667 cross index, 67 ref records) B

3057 - Catalog of Physical Parameters of Spectroscopic Binary Stars (Kraicheva, Popova, Tutukov and Yungelson 1980, CDS Bull. 19, 71) (936 records) B

3058 - A Catalogue of Chemical Elements Identified in Peculiar Stellar Spectra (Levato, Hernandez 1979, CDS Bull. 16, 93) (41 + 1756 + 562 records) B

3059 - A Catalogue and Biblicgraphy of Mn-Hg Stars (Schneider 1981, CDS Bull. 20, 113) (127 stars, 1851 records) B

3060 - General Catalogue of S Stars (SS) (Stephenson 1976, Publ. Warner & Swasey Obs. 2, No. 2) (741 records) A T

3061 - A Catalog of [Fe/H] Determinations (Cayrel de Strobel, Bentolila, Hauck, Lovy 1981, A & A Suppl. 45, 97) (update of 3054 to 1981.0) (1298 determinations, 703 stars) B

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III. SPECTROSCOPIC DATA:

3062 - MK Classification Extension (Kennedy 1981, Mt. Stromlo Obs.) (supersedes 3019) (32540 data + 350 ref records) B R

3063 - Revised Catalogue of Stellar Rotational Velocities (Uesugi and Fukuda 1982, Department of Astronomy, Kyoto University) (supersedes 3003) B

3064 - Catalog of Blue Objects at High Galactic Latitudes (Berger and Fringant 1977, 1980, A & A Suppl. 28, 123; 39, 39) B

3065 - Catalogue des Binaires Spectroscopiques avec Orbites (Pedoussant, Bourdoncle, Capdeville 1979; CDS Bull. 17, 21) (716 records) B

3066 - Catalog of Revised MK Types for G-M Stars (Keenan and Pitts 1980, Ap.J. Suppl. 42, 541) (552 records) B

3067 - Catalog of Be Stars (M. Jaschek and Egret 1981, IAU Symp. 98, in press) (1159 Stars) B

3068 - A List of Early-Type Chemically Peculiar Stars (Egret and M. Jaschek 1981, Comptes Rendus Symp. Liege) (3710 stars, 4896 records) B

3069 - A Catalogue of Stellar Spectrophotometric Data (Ardeberg and Virdefors 1980, A & A Suppl. 40, 307) (format follows Breger Cat. 3048 and extends it) (356 stars, 378 records) B

3070 - White Dwarfs 1,2 (LWDC) (Luyten 1970, 1977, U. of Minnesota Press, Minneapolis) (prepared at NDC/GSFC 1978, complete combined data) (6546 data + 548 remarks records) A T

3071 - Catalogue, Spectrum and Magnitude Data Bank of Be, Bp and Bpe Stars (Page, A.A. 1982) A F

3072 - Catalogue of Spectral and Luminosity Classes of 10396 Stars in Kapteyn Areas NN 2 - 43 (Bartaya, R.A. 1979, Bull. Abastumani Astrophys. Obs. No. 51) (10396 + 97 records) B

3073 - Cool Carbon Stars Found with the Baldone Schmidt Telescope (Alksne, Z. and Alksnis, A. 1980, Radioastrophys. Obs., Latvian Acad. Sci, Riga) (31 + 219 + 33 records) B

3074 - Faint Blue Stars in the Region near the South Galactic Pole (Haro and Luyten 1962, Bol. Tonantzintla y Tacubaya 22, 37) (8746 stars) B

3075 - MK Classification for HD Stars in the 25° < Dec < 30° Zone (Jensen, K.S. 1983, Astron. Astrophys. Suppl., submitted) (1003 records) B

3076 - Luminous Stars in the Northern Milky Way (LSN) (Hardorp et al. 1959-1965, Hamburg-Bergedorf, Vol. I-VI) (7389 records) A R T

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III. SPECTROSCOPIC DATA:

3077 - A Catalog of 0.2-A Resolution Far-Ultraviolet Stellar Spectra Measured with Copernicus (Snow and Jenkins 1977, Ap.J. Suppl. 33, 269) (60 stars, 9060 records) — A T

3078 - MK Classification Extension (Morris-Kennedy 1983) Mt. Stromlo Obs. (supersedes 1062) (36000 data + 450 reference records) — B

3901 - Rotational Velocities (BKRV) (Boyarchuk and Kopylov 1964, Publ. Crimean Astrophys. Obs. 31, 44) (tape prepared by Nagy and Sawyer 1979, ADC/GSFC) (2559 records) — A G T

3904 - Sixth Catalogue of Galactic Wolf-Rayet Stars (van der Hucht et al. 1981, Space Science Rev. 28, 227) (159 + 45 data, 143 remarks/reference records) — A T

3908 - Sixth Catalogue of the Orbital Elements of Spectroscopic Binary Systems (Batten 1967, Publ. Dom. Astrophys. Obs. 13, 119) (BA16) (737 records) — A

3909 - MK Classification Extension (Kennedy 1976, Mt. Stromlo Obs.) (27201 + 301 records) (superseded by 3019) — A M

3910 - Catalog of Far-Ultraviolet Objective-Prism Spectro-Photometry: Skylab Experiment S-019, Ultraviolet Stellar Astronomy (Henize, Wray, Parsons and Benedict 1979, NASA Ref. Publ. 1031) — C

3911 - MK Spectral Classifications, 4th General Catalogue (Buscombe 1980, Northwestern Univ.) (18540 records) — B

3913 - Discoveries on Southern, Red-Sensitive Objective-Prism Plates III: New Stars Having H-Alpha in Emission (Catalogue of 771 newly discovered emission stars, MacConnell 1980) — C

3917 - MK Spectral Classifications, 5th General Catalogue (Buscombe 1980, Northwestern Univ.) (20000 records) — B

3922 - Stellar Spectrophotometric Atlas 3130 - 10800 A (Gunn and Stryker 1983, Astrophys. J. Suppl., submitted) — A T

3923 - Michigan Catalogue of 2-Dimensional Spectral Types for the HD Stars, Vol. 3 (Zones -40° to -26°) (Houk 1982, U. Michigan) (30314 + 4837 records) — A T

IV. CROSS IDENTIFICATIONS:

4001 - A Compilation of Transit Tables for Star Numberings in Open Clusters (Hermilliod 1979, A&A Suppl. 36, 163) (data for 50 open clusters, 50 files) — B

4002 - Catalogue of HD, HDE and DM Identifications for Stars in Open Clusters (Hermilliod 1976, A&A Suppl. 26, 419) (7196 records) — B

4003 - General Catalogue of Stellar Identifications (CSI) (Jung and Bischoff 1977, see CDS Bull. 4, 27 and IAU Colloq. 35, 31) (binary packed) (430824 records) (see 4009 for updated version) — A

4703 - CSI EBCDIC, 143-byte records, completely unpacked with some flags missing (430824 records) (character version of 4003 prepared at GSFC; see 4009 for updated version) (character version of 4003 prepared at GSFC) — A M T

4004 - Table of Correspondences SAC/HD/DM/GC (Morin 1973, Obs. de Meudon) (258957 records) (superseded by 4931) — A T

4005 - Table of Correspondences BD/CD/CPD (packed binary) (Jung and Bischoff 1971, CDS Bull. 2, 7) (96806 records) — B

4705 - Table of Correspondences BD/CD/CPD (character version of 4005 unpacked at GSFC (96806 records) — A M

4006 - Catalogue of Correspondences CSI/ADS/IDS (Jung, Bischoff and Ochsenbein 1973, CDS Bull. 4, 27) (45135 records) — B

4007 - Table of Correspondences Giclas/BD (Hermilliod unpub) (Northern Hemisphere only) (1727 correspondences, 436 records) — B

4008 - Cross-Identifications of HDE Stars (HDEB) (Bonnet 1978, CDS Bull. 14, 114; 15, 115) (46781 + 4740 records) — B

4009 - Catalogue of Stellar Identifications, Edition 1979 (Ochsenbein, Bischoff and Egret 1979, see CDS Bull. 17, 88) (binary or character format, 434928 objects) (434928 binary records or 451885 character records) — B R

4010 - Table of Correspondences HD-SAC-GC (Ochsenbein, F.) Cross Index prepared from CSI 4009 (33342 records) — B

4011 - Correspondences CD / CPD, Zones -18° to -39° (Bonnet, B.) (170541 records) — B

4901 - HD-DM (Mead unpublished) — D

4902 - DM-HD (Mead unpublished) — D

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IV. CROSS IDENTIFICATIONS:

4903 -	HD-YBS (Nagy unpublished) (9091 records)	A	T
4904 -	YBS-HD (Nagy unpublished) (9110 records)	A	T
4905 -	General Catalogue of Variable Stars, 2nd Ed.: Table 1 - Nomenclature (GCVS-T1) (13078 records)	A G	T
4906 -	General Catalogue of Variable Stars, 2nd Ed.: Table 6 - Correspondences BD/CD/CPD (GCVS-T6) (5180 records)	A M	T
4907 -	Goddard Cross Index (Nagy and Mead unpublished)	D	
4908 -	HD-DM-ADS-IDS-RA for HD Stars (Nagy and Mead unpub.)	D	
4909 -	HD-SAO-DM-GC Cross Index (Nagy and Mead 1978, NASA TM 79564) (180411 records)	A P	T
4911 -	CSI Sorted by Spectral Type and Mv Brightest to Faintest (prepared at GSFC, same version as 4703) (430824 records)	A	
4912 -	CSI Sorted by Spectral Type and Mb Brightest to Faintest (prepared at GSFC, same version as 4703) (430824 records)	A	
4913 -	CSI EBCDIC, 80-Byte records, all flags in 1 32-bit word (character version of 4703 prepared at GSFC) (430824 records)	A	
4914 -	AGK3-BD (Warren 1978, CDS Bull. 15, 116) (183145 records)	A	T
4915 -	BD-AGK3, Non-BD Stars omitted (Warren 1978, CDS Bull. 15, 116) (179438 records)	A	T
4916 -	General Catalogue of Variable Stars, 2nd Ed.: Table 4 - Flamsteed Correspondences (GCVS-T4) (505 records)	A	T
4917 -	General Catalogue of Variable Stars, 2nd Ed.: Table 2 - Bayer Correspondences (GCVS-T2) (358 records)	A	T
4918 -	General Catalogue of Variable Stars, 2nd Ed.: Table 5 - BS-HR Correspondences (GCVS-T5) (965 records)	A	T
4919 -	General Catalogue of Variable Stars, 2nd Ed.: Table 12 - Ross Correspondences (GCVS-T12) (379 records)	A	T
4920 -	General Catalogue of Variable Stars, 2nd Ed.: Table 13 - Innes Correspondences (GCVS-T13) (178 records)	A	T
4921 -	General Catalogue of Variable Stars, 2nd Ed.: Table 14 - Bamberg Correspondences (GCVS-T14) (120 records)	A	T
4922 -	General Catalogue of Variable Stars, 2nd Ed.: Tables 15--18 Oklahoma (OK), Bologna (VB), Vatican (VV), Tokyo (TV) Observatory Correspondences (GCVS-T1518) (75 records)	A	T

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IV. CROSS IDENTIFICATIONS:

4923 - General Catalogue of Variable Stars, 2nd Ed.: Table 10 - Sonneberg Correspondences (GCVS-T10) (1954 records) A T

4924 - General Catalogue of Variable Stars, 2nd Ed.: Table 7 - Henry Draper Correspondences (GCVS-T7) (3464 records) A T

4925 - General Catalogue of Variable Stars, 2nd Ed.: Table 21 - Catalogue of Suspected Variables Correspondences (GCVS-T21) (809 records) A T

4926 - General Catalogue of Variable Stars, 2nd Ed.: Table 8 - Astronomische Nachrichten (AN) Correspondences (GCVS-T8) (9218 records) A T

4927 - General Catalogue of Variable Stars, 2nd Ed.: Table 9 - Harvard Variable (HV) Correspondences (GCVS-T9) (8625 records) A T

4928 - General Catalogue of Variable Stars, 2nd Ed.: Table 11 - SVS (Variables Discovered in USSR) Correspondences (GCVS-T11) (1226 records) A T

4929 - General Catalogue of Variable Stars, 2nd Ed.: Table 20 - Prager (P) Correspondences (GCVS - T20) (5829 records) A T

4930 - General Catalogue of Variable Stars, 2nd Ed.: Table 19 - Zinner (Z) Correspondences (GCVS - T19) (2191 records) A T

4931 - SAO-HD-DM-GC Cross Index (Astronomical Data Center 1983) (258997 records) (supersedes 4004) A

4932 - Dearborn Catalogue - HD Cross Index (Nagy, T.A. 1983, ADC Bull. 1, 226) (5764 records) A

4933 - HD - Dearborn Catalogue Cross Index (Nagy, T.A. 1983, ADC Bull. 1, 226) (5764 records) A

4934 - Two-Micron Sky Survey - Dearborn Catalogue Cross Index (Grasdalen, G.L. and Gaustad, J.E. 1971, Astron. J. 76, 231) (2573 records by IRC + 2573 records by DO) A

4935 - CSI Sorted by Mb Brightest to Faintest (prepared at GSFC, same version as 4703) (430824 records) A

4936 - CSI Sorted by Right Ascension (ascending) and Declination (north to south) (prepared at GSFC, same version as 4703) (430824 records) A

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V. COMBINED DATA:

5701 -	Catalogue of Nearby Stars (GL) (Gliese 1969, Veroff. Astron. Rechen-Inst. Heidelberg, No. 22) (1889 records)	A	T
5801 -	Catalogue of Nearby Stars (GL) (Gliese 1969, Veroff. Astron. Rechen-Inst. Heidelberg, No. 22) (1890 records) (selected data by G. Share/NRL: ID,RA,DEC,X-Ray intensity,comments)	A	T
5802 -	Yale Catalogue of Bright Stars, 3rd Ed. (YBS) (Hoffleit 1964, Yale Univ. Obs.) (9110 records)	A	T
5003 -	Data for FK4/FK4 Supp. Stars (Morin 1973, CDS Bull. 4, 4) (3522 records)	B	
5004 -	Catalogue of Stars Within 25 Parsecs of the Sun (Wcolley et al. 1970, Royal Obs. Ann. 5) (2150 records) (improved version with corrections under 5032)	B	
5005 -	Colours, Luminosities and Motions of the Nearer Giants of Types K and M (Eggen 1966, Royal Obs. Bull. No. 125) (1008 records)	C	
5006 -	Kinematic Studies of Early-Type Stars (Tables 1 and 2) (Rubin and Burley 1962, AJ 67, 491) (1440 + 898 records) (superseded by 5031 below)	B	
5007 -	Space Velocities of G and K Giants (Tables 2 and 5) (Yoss and T. E. Lutz 1971, Mem. RAS 75, 21) (161 + 631 records)	C	
5008 -	Space Velocity Catalogue (Eggen 1962, Royal Obs. Bull. No. 51) (3483 records)	C	
5009 -	New Kinematic Data for Bright Southern OB Stars Table 2: Kinematic Data (Lesh 1972, A&A Suppl. 5, 129) (440 entries)	C	
5010 -	New Kinematic Data for Bright Southern OB Stars Table 4: Combined Proper Motions (Lesh 1972, A&A Suppl. 5, 129) (456 records)	B	
5011 -	Catalogue of High Velocity Stars (Eggen 1964-65, Royal Obs. Bull. No. 84) (656 records)	B	
5012 -	Catalogue of Reduced uvby, Beta Photometry (Philip, Miller and Relyea 1976, Dudley Obs. Report No. 12) (5183 records)	B	
5013 -	Probable Members of the Small Magellanic Cloud (New Version, updated Oct 1978) (Azzopardi and Vigneau 1975, A&A Suppl. 22, 285) (remarks not available in machine-readable form) (524 members + 124 foreground stars)	C	

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V. COMBINED DATA:

5014 - uvby Estimated Astrophysical Parameters B R
(Philip and Egret 1980, A&A Suppl. 40, 199)
(9604 records)

5015 - SAC and Supplementary Data (Ochsenbein 1980, CDS Bull. 19, 74) (223564 + 66544 data, 187594 cross index records) B

5017 - Supergiant Stars (Egret 1980, CDS Bull. 18, 22) B
(5073 stars)

5018 - Catalog of Late-Type Stars with CH, HHO or SiO Maser Emission (Engles 1979, A&A Suppl. 36, 337) B
(1372 records)

5019 - Catalog of Masses and Ages of Stars in 68 Open Clusters B
(Piskunov 1980, CDS Bull. 19, 67) (10392 records)

5021 - Stellar Catalog for Attitude Determination in Space, Version II.I (Stein 1980, NSWC, Dahlgren, VA) C
(43099 Stars)

5822 - Catalog of IUE Observations (IUE NASA/ESA Observatories) A F
(April 3, 1978 - November 30, 1980) (superseded by 5829)

5023 - A Catalogue of Four-Colour Photometric Boxes (Philip, A.G.D. and Egret, D. 1982, Astron. Astrophys. Suppl., submitted) B

5024 - Catalogue of Geneva Photometric Boxes (Nicolet, B. 1982, Astron. Astrophys. Suppl. 48, 485) B
(35 description + 79732 data records)

5825 - The Bright Star Catalogue, 4th Revised Ed. (YBS4) A T
(Hoffleit 1982, Yale University Obs.)
(9110 data + 56 contents + 7970 remarks records)

5026 - CSI Catalogue with Selected Data (Ochsenbein, F. 1982) B
(contains identification (DM), RA(1950)DEC,l,b,M(v), A(v), spectral type, UBV, proper motions, radial vel.)
(434023 records)

5027 - Proper Motions and UBV Photometry of Stars in the Region of the h and x Persei Clusters (Numinov, N. 1980, Astron. Inst. Acad. Sci. UZB.SSR, Tashkent, unpublished) B
(3086 + 1055 + 1386 records)

5028 - Proper Motions and UBV Photometry of Stars in the Region of Open Clusters NGC 7788, NGC 7790, Berkeley 58 and Anonymous (Frolov, V.N. 1980, Pulkovo Obs., unpublished) B
(2169 records)

5829 - Catalog of IUE Observations (IUE NASA/ESA Observatories) A F
(April 3, 1978 - March 31, 1982) (28881 records)
(supersedes 5822)

5030 - Catalog of Space Velocity Vectors of 2595 B and A Stars B
(Palous, J. 1982, Bull. Inform. CDS 23, 96)
(2599 records)

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V. COMBINED DATA:

5031 - Kinematic Studies of Early-Type Stars (Tables 1 and 2) (Rubin et al. 1962, AJ 67, 491) (1440 + 898 records) (supersedes and replaces 5006) — A T

5032 - Catalogue of Stars Within 25 Parsecs of the Sun (Wcolley et al. 1970, Royal Obs. Ann. 5) (2150 records) — A T

5033 - DDC and Mg Photometry obtained at Kitt Peak National, Cerro Tololo Inter-American, and Prairie Observatories: Average values, individual observations, radial velocities of NGP and SGP stars. (881 + 2895 + 303 records) — B

5902 - Yale Bright Star Catalogue combined with Boss General Catalogue Data (Nagy 1979) (9110 records) — A M

5903 - SKYMAP Catalogue of 248727 Stars, Version 3.0 (Gottlieb and McLaughlin 1980, see Ap.J. Suppl. 38, 287, 1978) — A F T

5904 - Combined Star Catalogue (Ewald 1979) — B F

5906 - SKYMAP Catalogue of 248624 Stars, Version 3.1 (IBM 360 binary version) (McLaughlin 1981, see Ap.J. Suppl. 38, 287, 1978) (248624 records) — B

5908 - Combined List of Astronomical Sources, Version 1.0 (concatenation of 2811, 2068, 2056; Nagy, Hill and Mead 1982, Systems & Appl. Sci. Corp. SSD-T-5069-0123-82) (66787 records) (character coded version) — A T

5909 - Combined List of Astronomical Sources, Version 1.0 (concatenation of 2811, 2068, 2056; Nagy, Hill and Mead 1982, Systems & Appl. Sci. Corp. SSD-T-5069-0158-82) (66787 records) (binary version) — A T

5910 - Two-micron Sky Survey; Nearest SAO Star and Locations Palomar Sky Survey Prints (Nagy, Hill and Mead 1983, NASA TM, in press) (6817 entries, 5612 objects) — A

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VI. MISCELLANEOUS:

6001 - Catalogue of Photometric Sequences and Suppl. (Argue, Bok and Miller 1973, Univ. Arizona Mimeographs) (643 records, 473 Sequences, 9 globular-cluster comparison stars, 126 references) B

6002 - Bibliographical Star Index (1950-75) (BSI) (Spite, Kirchner, Lahmak and Ochsenbein 1980, CDS Bull. 18, 89) (about 80000 stars, about 11000 titles) (tape is packed IBM binary format) B R

6005 - Sensitivity Functions of Photometric Systems (Hauck AND Mermilliod 1976, CDS Bull. 10, 28) (607 records, 30 tables) B

6008 - Bibliographical Catalogue of Field RR Lyrae Stars (Heck and Lakaye 1977, A&A Suppl. 30, 397) (6607 records) B R

6009 - Bibliographical Index for Planetary Nebulae for 1965-1976 (Acker, Marcout and Ochsenbein 1977, A&A Suppl. 30, 217) E R

6010 - A Table of Semiempirical gf Values (Kurucz and Peytremann 1975, SAO Spec. Report No. 362) (265600 records) B

6011 - Finding List for Multiplet Table of NSRDS-NBS 3, Sections 1-7 (Adelman, Adelman and Fischel 1977, NASA/GSFC X-685-77-287) (8916 records) A

6013 - A Catalog of Radial Velocities in the Large Magellanic Cloud (Feitzinger and Weiss 1979, A&A Suppl. 37, 575) E

6014 - Bibliographical Index for Planetary Nebulae for the Period 1965-1979 (Acker, Marcout and Ochsenbein 1980, CDS Bull. 18, 84) E R

6015 - Bidelman-Parsons Spectroscopic and Bibliographical Catalog (Parsons, Buta, Bidelman 1980, CDS Bull. 18, 86) (45855 records, 40312 objects) A T

6016 - Line Spectra of the Elements (Reader and Corliss 1980-1, CRC Handbook of Chemistry and Physics; NSRDS-NBS 68) (100 files, 51257 records) B

6017 - Bibliographic Catalogue of Variable Stars (Wenzel 1981, CDS Bull. 20, 105) (257110 records) B

6018 - Index Catalogue of Visual Double Stars 1976.5 (Worley 1976, U. S. Naval Obs., Washington) (70295 records) B M

6019 - UBV Photoelectric Sequences in SA 92-115 (Landolt, A.U. 1973, AJ 78, 959) (642 Stars) E

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VI. MISCELLANEOUS:

6020 - Catalog of Infrared Observations (Gezari, Schmitz and Mead 1982, NASA TM 83819) (supersedes 2071) (5 files: 44+55046+20520+1326+1326 records) — A T

6901 - Bibliographical Star Index (1950-72) (Cayrel et al.) (BSI) (superseded by 6002) — B R

6903 - A Finding List for Observers of Interacting Binary Systems, 5th Ed. (Wood,Oliver,Florkowski,Koch 1980, Publ. Department of Astron., Univ. of Florida, Vol. I; Publ. Univ. Pennsylvania, Astron. Ser., Vol. XII) — C

6904 - Bibliographical Star Index (1973-1977) (BSI) (Spite, Kirchner, Lahmek and Ochsenbein 1980, CDS Bull. 18, 89). — R

6905 - Observational Catalogue of Visual Double Stars 1976.5 (Worley 1976, U. S. Naval Observatory, Washington) (301995 records) — R

VII. NON-STELLAR OBJECTS

7801 -	Revised New General Catalogue of Non-Stellar Astronomical Objects (RNGC) (Sulentic and Tifft 1973, Univ. of Arizona Press) (4 files, 8163+176+1037+61 records)	A T
7802 -	A Master List of Non-Stellar Objects (MOL) (Dixon 1976, IAU Colloq. 35, 167) (182973 records)	R M
7003 -	Catalogue of Quasi-Stellar Objects (Barbieri, Capaccioli and Zambon, Nov. 1976, Inst. of Astron., Univ. of Padova) (3354 records)	B
7704 -	Catalogue of Abell and Zwicky Clusters of Galaxies (Abell 1958; Corwin 1974; Kalinkov,Stavrev and Kaneva 1975; Zwicky,Herzog,Wild,Karpowicz and Kowal 1961-1968) (prepared by Bulgarian Acad. of Science Astron. Dept.) (21179 records)	A T
7005 -	Catalogue of Star Clusters and Associations (Alter et al. 1970) selected data by J. Kluke, A.F.J. Moffat, Th. Schmidt-Kaler and N. Vogt (1975) (1039 records)	B
7006 -	Catalogue of Polarization Measurements and Related Data of Extragalactic Radio Sources (Eichendorf and Reinhardt 1979, Astrophys. Sp. Sci. 61, 153)	C
7007 -	Dark Nebulae (B.T. Lynds 1962 Ap.J. Suppl. 7, 1) (LDN) (updated, 1791 records)	A G T
7008 -	Pulsars (Seiradakis unpublished) (PUL) (149 records)	A T
7009 -	Bright Nebulae (BBN) (B.T. Lynds 1965, Ap.J. Suppl. 12, 163) (1125 records)	A M T
7010 -	3rd Cambridge Radio Catalog (Revised) (3CR) (Bennett 1961, Mem. RAS 68, 163) (328 records) (selected data by G. Share/NRL: ID, RA, DEC, X-Ray intensity, comments)	A T
7011 -	Kitt Peak Quasar Catalog (QKP) (Deveny, Osborn and Janes 1971, PASP 83, 611) (261 records) (selected data by G. Share/NRL: ID, RA, DEC, X-Ray intensity, comments)	A T
7012 -	3rd UHURU X-Ray Catalog (3U) (Giaconni et al. 1974, Ap.J. Suppl. 27, 37) (161 records) (selected data by G. Share/NRL: ID, RA, DEC, X-Ray intensity, comments)	A T
7013 -	Globular-Cluster Catalog (Arp 1965, Stars and Stellar Systems, Vol. 5) (119 records) (selected data by G. Share/NRL: ID, RA, DEC, X-Ray intensity, comments)	A T

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VII. NON-STELLAR OBJECTS

7014 - Galactic Supernova Remnants Catalogue (SNCC) A T
(Clark and Caswell 1976, MNRAS 174, 267)
(97 + 23 records)

7015 - Galactic Supernova Remnants Catalogue (SNIL) A T
(Ilovaisky and Lequeux 1972, A&A 18, 169) (116 records)

7016 - Reference Catalogue of Bright Galaxies (de Vaucouleurs A T
and de Vaucouleurs 1964, Univ. of Texas Press, Austin)
(2597 records) (VGC)

7017 - Quasars (QB) A T
(G.R. Burbidge et al. 1977, Ap.J. Suppl. 33, 113)
(637 records)

7018 - Fourth UHURU X-Ray Catalogue (4U) A T
(Forman et al. 1978, Ap.J. Suppl. 38, 357)
(339 records)
(selected data by G. Share/NRL: ID, RA, DEC, X-Ray
intensity, comments)

7019 - Second Ariel X-Ray Catalogue (2A) A T
(Ccoke et al. 1978, MNRAS 182, 489) (107 records)
(selected data by G. Share/NRL: ID, RA, DEC, X-Ray
intensity, comments)

7020 - H II Regions (SHII) A T
(Sharpless 1959, Ap.J. Suppl. 4, 257) (313 records)

7021 - Catalogue of Reflection Nebulae (VDB) A T
(van den Bergh 1966, AJ 71, 990) (158 records)

7022 - Catalogue of Open Clusters A F
(Lynga 1980; see Lynga and Lundstrom 1980,
IAU Symp. 85, 123)

7023 - A Catalogue of Absorption Lines in CSO Spectra C
(Ellis 1978, MNRAS 185, 613) (108 objects)

7724 - Strasbourg Catalog of Galactic Planetary Nebulae A R T
(Acker, Marcout and Ochsenbein 1980, CDS Bull. 18, 84)
(1446 objects)

7025 - Morphological Catalog of Galaxies (Vorontsov-Velyaminov, B
et al. 1962-68, Sternberg Inst. Moscow, Vol. I-IV)
(28904 objects)

7825 - Morphological Catalog of Galaxies (Vorontsov-Velyaminov, A T
et al. 1962-68, Sternberg Inst. Moscow, Vol. I-IV)
(29003 records)

7026 - Uppsala General Catalogue of Galaxies (Nilson 1973, B
Uppsala Ann. 6) (12921 objects)

7826 - Uppsala General Catalogue of Galaxies (Nilson 1973, A T
Uppsala Ann. 6) (12940 records)

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VII. NON-STELLAR OBJECTS

7027 - A Revised Optical Catalogue of Quasi-Stellar Objects (A. Hewitt and G. Burbidge 1980, Ap.J. Suppl. 43, 57) (1549 objects) (improved version under 7037) — B

7028 - Southern Groups and Clusters of Galaxies (DN) (Duus and Newell 1977, Ap.J. Suppl. 35, 209) (960 records) — A T

7029 - Molonglo Reference Catalog of Radio Sources (Large, M.I., Mills, B.Y., Little, A.G., Crawford, D.F. and Sutton, J.M. 1981, Mon. Not. Roy. Astron. Soc. 194, 693) (12141 records) — B

7830 - Catalogue of Open Clusters (Lynga 1981; see Lynga and Lundstrom 1980, IAU Symp. 85, 123) — C

7031 - Catalogue of Star Clusters and Associations, Suppl. 1, Vol. I-III (Ruprecht, J., Balazs, B., White, R.E. 1982, Bull. Inform. CDS 22, 132) (supplement to 1970 published edition: see 7005) (3702 entries, 3704 records) — B

7032 - Catalogue of High Redshifts (Triay, R. 1982, Astron. Astrophys. Suppl., to be published) (7246 + 4618 records) — B

7033 - An Optical Catalogue of Radio Galaxies (G. Burbidge and Crowne 1978, Ap.J. Suppl. 40, 583) (272 data, 130 + 130 reference records) — A T

7034 - The ESO/Uppsala Survey of the ESO(B) Atlas (Lauberts, A. 1982, European Southern Observatory) (18438 objects, 2124 + 36876 records) — B

7035 - Catalogue of Markarian Galaxies (Markarian, B.E. 1967, Astrofis. 3, 55; 1969, Astrofis. 5, 443 and 5, 581; Markarian, B.E., Lipovetskii, V.A. 1971, 1972, 1973, 1974, 1976, 1976, Astrofis. 7, 511; 8, 155; 9, 487; 10, 307; 12, 389; 12, 657; Markarian, B.E., Lipovetskii, V.A., Stepanian, D.A. 1977, Astrofis. 13, 225 and 13, 397) (1117 entries) — B

7036 - A Catalog of Galaxy Redshifts (H.J. Rood, unpublished) (3981 records) — A F T

7037 - A Revised Optical Catalogue of Quasi-Stellar Objects (A. Hewitt and G. Burbidge 1980, Ap.J. Suppl. 43, 57) (1549 data + 748 ref + 748 sorted ref records) — A T

7038 - A Deep Objective-Prism Survey for Large Magellanic Cloud Members (Sanduleak 1969, Contr. Cerro Tololo Inter-American Obs., No. 89) (1272 records) — A F T

7039 - Detailed Bibliography on the Surface Photometry of Galaxies (E. Davoust and W.D. Pence 1982, Astron. Astrophys. Suppl. 49, 631) (1262 data + 451 reference records) — B

7903 - List of Globules Based on 7 Lists by Wesselius (compiled by Wesselius 1979) (821 records) — A T

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VII. NON-STELLAR OBJECTS

7904 - Seyfert Galaxies (Weedman 1977, Annu. Rev. Astron. Astrophys. 15, 69; 1978, MNRAS 184, 11P) (121 data + 230 reference records) — A T

7905 - Second Reference Catalogue of Bright Galaxies (VGC2) (de Vaucouleurs, de Vaucouleurs and Corwin 1976, Univ. of Texas Press, Austin) (4364 records) — R T

7906 - List of Positions of All X-Ray Sources with Positions Known More Accurately than those Given in the 4U or 2A Catalogues (Dolan 1979, NASA/GSFC) (266 data + 396 notes records) — A T

7908 - Catalogue of Ultraviolet, Optical and H I Data for 201 Virgo Cluster Galaxies (Cornett and Smith 1981, ADC Bull. No. 2; Smith and Cornett 1981, Ap.J., in press) (201 records) — A

7909 - A Master List of Non-Stellar Objects (MOL) (Dixon 1980, see Astron. Astrophys. Abstracts 28.002.075) (182855 records) — R

7910 - The Ariel (3A) Catalogue of X-Ray Sources (Warwick et al. 1981, MNRAS 197, 865; McHardy et al. 1981, MNRAS 197, 893) (109 Low Lat. sources; 142 High Lat. sources) — B

7911 - Catalogue of Galaxies and of Clusters of Galaxies, I-VI (Zwicky et al. 1961, 1963, 1965, 1966, 1968, California Institute of Technology, Pasadena, 6 volumes) Partial data for individual galaxies only (29363 galaxy + 560 field header records) — A T

7912 - Catalog of CO Radial Velocities toward Galactic H II Regions (Blitz, L., Fich, M., Stark, A.A. 1982, Astrophys. J. Suppl. 49, 183) — B

7913 - A Master List of Radio Sources (Dixon, R.S. 1970, Astrophys. J. Suppl. 20, No. 180) Version RA43 (84560 records) — R

7914 - A Revised Shapley-Ames Catalog of Bright Galaxies (Sandage, A. and Tammann, G.A. 1981, Carnegie Inst. of Washington Publ. 635) (1246 records) — B

7915 - The Parkes Catalogue of Radio Sources (J.G. Bolton, F.F. Gardner, M.B. Mackey 1964, Australian J. Phys. 17, 340 (-20° to -60°); R.M. Price and D.K. Milne 1965, Australian J. Phys. 18, 329 (-60° to -90°); G.A. Day, A.J. Shimmins, R.D. Ekers, D.J. Cole 1966, Australian J. Phys. 19, 35 (0° to +20°); A.J. Shimmins, G.A. Day, R.D. Ekers, D.J. Cole 1966, Australian J. Phys. 19, 837 (0° to -20°); A.J. Shimmins and G.A. Day 1968, Australian J. Phys. 21, 377 (+20° to +27°) (8098 records) — P

7916 - Five College Radio Astronomy Observatory Pulsar List (R.N. Manchester and J.H. Taylor 1981, Astron. J. 86, 1953) (322 records) — B

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7917 - A Catalogue of Extragalactic Radio Sources having Flux Densities Greater than 1 Jy at 5 GHz (H. Kuehr, A. Witzel, I.I.K. Pauliny-Toth, U. Nauber 1981, Astron. Astrophys. Suppl. 45, 367) (600 records) B

7918 - The Fourth Cambridge Survey of Radio Sources (4C) (J.D.H. Pilkington and P.F. Scott 1965, Mem. Roy. Astron. Soc. 69, 183; J.R.B. Gower, P.F. Scott and D. Wills 1967, Mem. Roy. Astron. Soc. 71, 49) B

7919 - A Catalogue of Extragalactic Radiosource Identifications (M.P. Veron and P. Veron 1983, see Astron. Astrophys. 18, 309, 1974 for original version) B

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VIII. CATALOGUES SORTED BY PLATE AREAS

8901	- Plate Centers of Palomar Sky Survey	A	
8902	- Plate Centers of Whiteoak Extension of POSS	A	
8903	- Plate Centers of European Southern Obs. Sky Survey	A	
8904	- Plate Centers of Lick Observatory Sky Survey	A	
	- Catalogues Sorted by Palomar Plate Areas with X- and Y-Coordinates Given in mm (Nagy)		
	8905 - SAO	A	T
	8906 - Two-Micron Sky Survey	A	
	8907 - RNGC	A	
	8908 - Reference Catalogue of Bright Galaxies	A	
	8909 - CSI (see 4703)	A	
8910	- CSI Sorted by Lick Plate Areas (Nagy 1978)	A	
8911	- Master Specialty Catalogue (Nagy 1977) (concatenation of 8906,8907,8908; 1037 files)	A	T
	- An Emission-Line Survey of the Milky Way (Parker, Gull and Kirshner 1979)		
	8912 - Plate Centers (Nagy 1979)	A	
	8913 - SAO Catalog Sorted by Plate Areas with X- and Y-Coordinates given in mm (Nagy 1979)	A	
	- Catalogues Sorted by European Southern Obs. Blue Plate Areas with X and Y Coordinates Given in mm (606 fields)		
	8914 - SAO	A	
	8915 - CSI (see 4703)	A	
8912	- The Two-Micron Sky Survey: Nearest SAO Star and Locations on Palomar Sky Survey Prints (Nagy, T.A. 1983, ADC Bull. 1, 183) (6817 records)	A	